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**ENERGY**



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8 October 1985

## USSR REPORT ENERGY

### CONTENTS

#### FUELS

#### OIL AND GAS

|  |    |
|--|----|
| Potential Economies in Yamburg Field Development Outlined<br>(G. A. Shemrayev, V. I. Yelistratov; STROITELSTVO<br>TRUBOPROVODOV, No 4, Apr 85) ..... | 1  |
| Solutions to Problems of Yamburg Infrastructure Development<br>(V. V. Plekhanov; STROITELSTVO TRUBOPROVODOV, No 4,<br>Apr 85) .....                  | 5  |
| Best Collectives in Industry Post Results, Obligations for 1984-85<br>(R. S. Gorshkova, et al.; NEFTYANOYE KHOZYAYSTVO, No 5,<br>May 85) .....       | 11 |
| Ukrainian Oil, Gas Units Report 1984 Successes<br>(NEFTYANAYA I GAZOVAYA PROMYSHLENNOST, No 1, Jan-Mar 85)   | 21 |
| Raise Drilling Efficiency at Astrakhan Gas Condensate Field<br>(R. S. Vorob'ev; GAZOVAYA PROMYSHLENNOST, No 7, Jul 85)                               | 25 |
| Improve Drilling Practices at Yamburg<br>(GAZOVAYA PROMYSHLENNOST, No 7, Jul 85) .....   | 27 |
| Further Development Drilling at Medvezhye Field<br>(O. M. Yermilov, et al.; GAZOVAYA PROMYSHLENNOST, No 7,<br>Jul 85) .....                          | 29 |
| New Estimate of Astrakhan Gas Potential Sought<br>(GAZOVAYA PROMYSHLENNOST, No 7, Jul 85) .....  | 31 |

|  |    |
|--|----|
| Licensing of Mingazprom Builders Implemented<br>(Ye. V. Konstantinenko; GAZOVAYA PROMYSHLENNOST, No 7,<br>Jul 85) .....                      | 32 |
| Cold-Weather Working of High-Viscosity Wells Analyzed<br>(A. A. Dergachev, K. D. Dzhulamanov; NEFTYANOYE KHOZYAYSTVO,<br>No 3, Mar 85) ..... | 34 |
| Tyumen Oblast Bulk Plants Incorrectly Subordinated<br>(Vladimir Akimovich Akimov Interview; NEFTYANIK, No 2,<br>Feb 85) .....                | 37 |
| Power Textbook Reviewed<br>(A. F. Shkuta; GAZOVAYA PROMYSHLENNOST, No 7, Jul 85) .....   | 42 |
| AzSSR Oil and Gas Drilling Figures for January 1985<br>(VYSHKA, 10 Feb 85) .....   | 43 |
| AzSSR Oil and Gas Drilling Figures for January-February 1985<br>(VYSHKA, 12 Mar 85) .....  | 44 |
| AzSSR Oil and Gas Drilling Figures for January-March 1985<br>(VYSHKA, 9 Apr 85) .....  | 46 |
| AzSSR Oil and Gas Drilling Figures for January-April 1985<br>(VYSHKA, 12 May 85) .....   | 48 |
| AzSSR Oil and Gas Drilling Figures for January-May 1985<br>(VYSHKA, 8 Jun 85) .....  | 50 |
| AzSSR Oil and Gas Drilling Figures for January-June 1985<br>(VYSHKA, 9 Jul 85) .....   | 52 |
| AzSSR Oil and Gas Production Figures for January 1985<br>(VYSHKA, 9 Feb 85) .....  | 54 |
| AzSSR Oil and Gas Production Figures for January-February 1985<br>(VYSHKA, 10 Mar 85) .....  | 55 |
| AzSSR Oil and Gas Production Figures for January-March 1985<br>(VYSHKA, 7 Apr 85) .....  | 57 |
| AzSSR Oil and Gas Production Figures for January-April 1985<br>(VYSHKA, 10 May 85) .....   | 59 |
| AzSSR Oil and Gas Production Figures for January-May 1985<br>(VYSHKA, 7 Jun 85) .....  | 61 |
| AzSSR Oil and Ga Production Figures for January-June 1985<br>(VYSHKA, 7 Jul 85) .....  | 63 |



## Briefs

|  |    |
|--|----|
| Shirvanneft Workers Exceed Plan          | 65 |
| Swamp Vehicle Price Checked              | 65 |
| Mingazprom's Pipeline Cleaning Equipment | 65 |
| New Offshore Drilling Rig                | 66 |
| Usinsk Brigade's Drilling Successes      | 66 |
| Hydraulic Dredges to Siberia             | 66 |
| Karadagneft Collective Surpasses Plan    | 66 |
| Kalameddin Field Increases Recovery      | 67 |
| Kazakh Oil Workers' Successes            | 67 |
| AzSSR Brigades' Production Successes     | 67 |
| Komineft Workers to Arctic               | 67 |
| Urengoy Drilling Up                      | 68 |
| Gas Fields Discovered                    | 68 |
| New Substation                           | 68 |
| State Farm at Drilling Enterprise        | 68 |
| New Remote-Controlled Pipeline Valve     | 69 |
| Mubarak Gas Refinery Progress            | 69 |
| New Offshore Platform Design             | 69 |
| Natural Gas Filling Station              | 69 |
| Exploration Wells in Kamchatka           | 69 |
| Remote-Controlled Pipeline               | 69 |
| Anti-Corrosive 'Grease'                  | 69 |

## COAL

|   |    |
|---|----|
| Ministers Debate Coal Pipeline Construction Delay<br>(A. Valentinov; SOTSIALISTICHESKAYA INDUSTRIYA, 25 May 85) | 70 |
| New Management Forms, Technology Discussed<br>(A. Bogachuk; PRAVDA, 27 Apr 85) .....                            | 73 |
| Deceleration of Kuzbass Coal Basin Development Criticized<br>(I. Reznikov; SOVETSKAYA ROSSIYA, 17 Apr 85) ..... | 75 |
| Coal Conveyor at Kansk-Achinsk Complex Described<br>(Yu. Yudin; TRUD, 22 Mar 85) .....                          | 78 |
| Book on Thin-Seam Coal Mining Reviewed<br>(V. G. Yatskikh; UGOL UKRAINY, No 6, Jun 85) .....                    | 80 |
| Synopses of Articles in UGOL UKRAINY No 6, Jun 1985<br>(UGOL UKRAINY, No 6, Jun 85) .....                       | 83 |

## ELECTRIC POWER

### NUCLEAR POWER

|  |    |
|--|----|
| Status of Construction Work at Minskaya ATETs<br>(V. Bogdanovich; NARODNOYE KHOZYAYSTVO BELORUSSII, No 8,<br>Aug 85) ..... | 91 |
|--|----|

## NON-NUCLEAR POWER

|   |     |
|---|-----|
| Council of Ministers Decree on Winter Measures, Fuel Reserves<br>(IZVESTIYA, 19 Jul 85) .....                                     | 92  |
| Synopses of Articles in ENERGETIKA I ELEKTRIFIKATSIYA, April-June 1985<br>(ENERGETIKA I ELEKTRIFIKATSIYA, No 2, Apr-Jun 85) ..... | 94  |
| <b>Briefs</b>   |     |
| Sayano-Shushenskaya GES Equipment Delivered   | 97  |
| Completing Ekibastuz-Ural Line  | 97  |
| Ust-Ilimskaya GES Production Level  | 97  |
| Neryungrinskaya GRES Production Level   | 98  |
| Drainage System Maintenance Aided   | 98  |
| Krasnovodskaya TETs Tripling Capacity   | 98  |
| Ust-Ilimskaya GES Power Record  | 98  |
| Baypazinskaya GES Increases Capacities  | 99  |
| USSR-Finland Converter Complex  | 99  |
| Tashkent Power Line Operating   | 100 |
| Maryyskaya GRES Production Report   | 100 |
| Novoangrenskaya GRES Progress Report  | 100 |
| USSR-Afghanistan Power Connection   | 100 |
| Berezovskaya GRES-1 Construction Progress   | 101 |

OIL AND GAS

UDC 553.002.2(571.1)

POTENTIAL ECONOMIES IN YAMBURG FIELD DEVELOPMENT OUTLINED

Moscow STROITELSTVO TRUBOPROVODOV in Russian No 4, Apr 85 pp 17-18

[Article by G. A. Shemrayev and V. I. Yelistratov, YuzhNIIGiprogaz, Donetsk: "More Efficient Design and Engineering Solutions the Key to Successful Development of Yamburg Field"]

[Text] The need for substantial cuts in capital investment and reductions in services, maintenance and construction manpower and to meet rigorous engineering economic standards calls for the development and implementation of more efficient design and engineering solutions in the construction of support facilities at the Yamburg gas condensate field. Implementation of new solutions will generate savings of some 1.5 billion rubles in capital investment.

In planning and designing field facilities the effort has been made to select the best location and the optimum number of gas treatment units (UKPG) and the best gas treatment, gathering and field transport systems. We have seen the implementation of many new steps to accelerate the industrialization construction operations and to improve the movement of freight traffic. Fundamentally new systems and methods of operating and maintaining field facilities have been developed.

It has been decided to treat the gas here for transport by absorption dehydration. Practical experience with the operation of these field facilities and gas transport systems has confirmed the substantial advantages this system offers in economic and operational terms over the adsorption method. Advances in engineering and improvements in equipment design by organizations of Mingazprom [Ministry of the Gas Industry] and Minkhimmash [Ministry of Chemical and Petroleum Machine Building] have made it possible to cut the cost and specific metal consumption of a dehydration facility 3-4-fold as compared with the same indicators for facilities in operation at the Medvezhye field.

High-capacity regeneration facilities, which have already shown themselves to be highly reliable and efficient in operations at the Medvezhye, Vyngapurskoye and Urengoy fields, are going to be used at Yamburg to restore the concentration of absorbent and hydration inhibitor solutions.

Working from baseline requirements supplied by Mingazprom, Minkhimmash is now developing equipment for pyroregeneration of absorbent and hydration inhibitor



and heating the heat carrier, which, together with elimination of the steam boiler from the design of the gas-treatment unit, should increase the operational reliability of the gas-treatment facility overall and reduce the maintenance manpower requirement to a minimum.

While designs for field support facilities at the Medvezhye and Vyngapurskoye fields were the country's first to demonstrate the advantage to be derived from building gas-treatment units with capacities of 10-15 billion  $\text{m}^3$  of gas per year, the optimum requirements for development of the Yamburg field have called for capacities of 25-30  $\text{m}^3$  per year.

The number and optimum capacity of gas-treatment facilities are established on the basis of engineering-economic comparison of a number of variants. This takes account of gas recovery levels during the period of peak operation, the capacities of field gas-treatment facilities currently in operation, optimum hydraulic and thermal indicators and indicators for the operational characteristic of the gas-gathering system, the need to insure reliable supplies of gas to consumers and the practical advantages to be derived from concentrating capacities at a single site. Computations also took account of the cost of building the gas-gathering system, roads for motor vehicle traffic, collector lines for moving gas around within the field, gas-treatment facilities and the high-pressure compressor units (KS).

As a rule, the diameters of the gas gathering lines for a field and the capacity of a field's gas gathering system used to be determined on the basis of what it would take to move the gas fast enough to remove the liquids and insure hydraulic losses of the order of 3-5 per cent. In planning and designing field facilities for Yamburg the optimum gathering line diameters and hydraulic loss values for the gas gathering system are being established on the basis of an engineering-economic comparison of gas gathering systems using pipe with diameters of 300, 400 and 500 mm and characterized by different hydraulic loss values (5-25 per cent of outlet pressure) at the end of a given period of continuous gas production. This comparison took account of what it cost to compress the gas in the high-pressure compressor units to compensate the losses in pressure. It was found that gas gathering systems using the 400-mm pipe yielded optimum values; similar values could also be obtained from a system which combined the 300 and the 500-mm pipe; these two systems have roughly equal adjusted costs and are characterized by hydraulic losses ranging between 12 and 17 per cent.

These designs will make it possible to reduce adjusted costs by 25 per cent and metal consumption by some 30 per cent.

The use of large-diameter pipe for the gas gathering system and, accordingly, the connection of a number of clusters to each gas pipeline, and at the same time the elimination of the metering lines, requires the use of highly reliable systems for measuring flow rates of each individual well directly at the well-head.

The modified field development plans prepared by VNIIGaz and TyumenNIIgiprogazprom made it possible to increase the size of a gas well cluster without degrading performance indicators. Reductions in the size of the gas gathering systems, the network of access roads to the wells, the pipeline system and the network of



high-voltage power lines will make it possible to cut capital investment by some 230 million rubles.

With the objective of maintaining the weight-bearing capacity of the ground and the reliability and stability of the pipelines, it has been decided to go to a system whereby gas leaving the treatment facility will be cooled to negative temperatures year round. In view of the fact that standard field gas-treatment facilities do not permit the year-round cooling of gas to negative temperatures, this design calls for a gas-cooling system incorporating centrifugal expansion and air-cooling units. As compared with steam-compressor coolers, the use of this system will yield savings in the neighborhood of 30 million rubles a year. This system of cooling the gas at the treatment unit has been designed so as to be compatible with the design and parameters of field and mainline gas-transport systems at the head end of the gas pipeline.

The system of field gathering mains running from the gas-treatment unit to the main compressor station of the main gas pipeline has been designed with the objective in view of insuring reliable and continuous transportation of the gas.

The automation of production operations will optimize production operations and over the long term make possible the safe and reliable operation of facilities without the continuous presence of service personnel.

In planning and designing field facilities for the Yamburg site, particular attention was given to the effort to intensify the industrialization of field facility construction operations.

SibNIPigazstroy and YuzhNIIGiprogaz have developed a number of different plans and designs for Yamburg field facilities which call for modular pontoons weighing up to 300 t and large modules, which are making it possible to building virtually all gas treatment facilities in accordance with the modular principle.

Fabrication of these modular pontoons was first undertaken at Tyumen on construction sites of the Sibkomplektmontazh Association. One gas treatment facility requires 24-26 modules. The pontoon units contain the frameworks for the gas-treatment and diethylene glycol regeneration facilities, water storage tanks, water pumping unit, boiler unit, pumping unit for injecting waste water into the formations and the oil trap. Other gas treatment facilities will be built using all factory-prefabricated modular components and some paneled frame units. This is going to make it possible to do 75 per cent of all construction and installation work in the factory and thereby to improve the quality of construction and to reduce the number of the most highly skilled workmen required at the construction site.

Minkhimmash has developed some high-capacity modular gathering-line intake units, simplified gas and fluid absorber support units and gas-flow metering modules. Introduction of the new gathering line intake modules alone can reduce capital expenditures by some 2.7 million rubles and metal consumption by 740 tons.

Experience gained at the largest fields in the Tyumen north shows that rapid industrial development requires the allotment of a preparatory period for the construction of transport facilities, engineering support systems, facilities

for both customer and construction operations and housing and for clearing the site. By improving the transport system for the first phase of field construction operations and building a rail line and a port, by these three things alone we will be able to cut the amount of construction and installation at Yamburg to the tune of some 550 million rubles.

It will be to advantage to develop a general plan for integrated development of the industrial and social infrastructure of the region, which, according to computations undertaken by the Siberian division of the USSR Academy of Sciences, will make it possible to cut capital investment by substantial amounts and, if the decision is made to factor in a preparatory period, both to create comfortable conditions for construction and operations personnel and to reduce the periods of time required for the industrial development of the fields.

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OIL AND GAS

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SOLUTIONS TO PROBLEMS OF YAMBURG INFRASTRUCTURE DEVELOPMENT

Moscow STROITELSTVO TRUBOPROVODOV in Russian No 4, Apr 85 pp 18-20

[Article by V. V. Plekhanov, Glavurengoygazstroy, Novyy Urengoy: "Apply Integrated Solutions to Problems of Yamburg Infrastructure Development"]

[Text] The adverse climatic and geocryological conditions prevailing in the vicinity of the Yamburg field, the remoteness of this area from sources of building materials and supplies, the time required and the difficulty involved in establishing a reliable transportation system for bringing in needed supplies and the complete absence of a ramified network of roads and engineering support systems have all confronted planners, designers, builders and operations personnel here with a number of problems whose solution is going to be a determining factor in the success of efforts to accelerate the construction of field operations facilities here.

With the assistance of a number of subcontracting scientific research and planning and design organizations, YuzhNIIGiprogaz, the general designer for the field development project here, has undertaken a series of geodetic, hydrogeological, engineering geological and geocryological surveys and a number of special studies in support of efforts to select sites for construction of industrial and housing facilities and the supporting civil engineering projects.

The Yamburg field is one of those to which access is difficult; it is difficult to establish a system of transportation here while the construction crews are developing the site. Traffic during the summer moves by air (helicopters) and water and by air and tracked vehicles during the winter. The water access is navigable for only 60 days out of the year, and even this period is frequently interrupted by heavy storm winds in Ob Gulf.

Taking these circumstances into account, YuzhNIIGiprogaz and SibNIPIgazstroy together with the construction people have developed a transportation system for the field which makes it possible to move traffic in and out.

Completion of the transportation complexes required together with construction of a ramified system of hard-surface roads for motor vehicle traffic will make it possible to solve the transportation problem for Yamburg once and for all and permit deliveries of supplies to the field year round.

Experience gained from the construction of field facilities at Medvezhye, Urengoy and other gas fields has demonstrated that it is essential to prepare ahead of time for field development operations.

First and foremost this requires the establishment of bases of operation for the construction organizations and the deep-drilling teams, personal services and support facilities and the construction of housing for construction personnel, drillers and operations people, port facilities and aircraft landing strips.

Proper preparation of the construction site is of critical importance here. To avoid heating up the ground with the heat of the buildings and lines under construction, the designs here call for the site to be filled and built up with sandy soil to an average height of 1-1.5 m. This must be done during the winter without disturbing the natural soil cover and vegetation of the tundra.

Construction of field facilities here requires a total of between 35 and 40 million  $m^3$  of soil. The known sources of sandy soil in this region which is suitable for use as site fill are inadequate in the extreme. Plans call for this kind of soil to be extracted for the most part hydromechanically, heaped up, processed and then trucked to the construction site.

The experts in Mintransstroy [Ministry of Transport Construction], however, are of the opinion that this particular sand contains a great deal of silt. As the soil is built up, any water in combination it contains will not drain off; so when it freezes with the soil, it will ultimately form a conglomerate which will be difficult to work during the winter. Sandy soil from dry quarries contains a great deal of ice. When it melts it can cause settling, which will have undesirable consequences.

To build a drainage layer using a mix of sand and gravel brought in from outside will require deliveries of soil running to something like 4 million  $m^3$  a year, or roughly 6 million tons. Practically speaking, this volume of soil would be impossible to bring in by ship during the period available for navigation, we would not have enough cranes to unload it for storage and on top of that a mix like this would cost 50-80 rubles/ $m^3$ .

Deliveries of sandy soil can be arranged from the field at Urengoy. This would require, first of all, the rapid construction of a railroad to Yamburg and the transportation of high-grade alluvial sand from the bottom land along the Arkatabyakha River. This solution to the problem would make it possible to deliver soil directly to the construction site over a temporary rail bed constructed for the winter.

The use of hydraulic pipeline transport would also not be without interest in this connection.

It would also make sense to look for good-quality soil in the deeper layers of permafrost in the vicinity of the field itself and bring it up by air lift.

Which of these solutions would be the most efficient and the most acceptable is a question which should be answered by our scientific research institutes. It is my view that experts from VNIIST [All-Union Scientific Research Institute of



Main Pipeline Construction], VNIIPromgaz [All-Union Scientific Research Institute of Gas Utilization in the National Economy and the Underground Storage of Petroleum, Petroleum Products and Liquefied Gas] and other organizations should also be involved in efforts to solve this problem.

The problem of loosening the soil would also pose problems. At permafrost temperatures of  $-5 \div -7$  °C this soil can be loosened by explosives alone. So we would first need to form a blast hole-drilling organization at the field and provide it with supplies of explosives, drilling equipment etc.

We should be giving particular attention as well to problems associated with the construction of beds for interfield and access roads. The need has already arisen for tests of the application of nonwoven synthetic materials and heating plates in building these road beds.

The time required to lay the base and foundation will to a great extent determine construction times overall.

The universal presence of frozen soil here has dictated the construction of ventilated underground works. The drill-and-sink method is used to position the piles. This is a method whereby the piles are sunk in predrilled large-diameter holes; the holes are filled with mud and the piles then filled with fine concrete.

One of the problems involved in the construction of pile foundations is the problem of drilling the holes themselves.

The Orgtekhstroy Trust has developed a steam vibroleader. Tests of this unit have demonstrated that it can be used at sites where construction has already begun, where there are adequate supplies of electric power and steam. The steam vibroleader has yet to find any extensive application at the field.

Together with construction and installation organizations, Orgtekhstroy is working for the introduction on a widespread basis of the small thermodrills developed by the Kazakh Polytechnical Institute. A thermodrill system mounted on a swamp vehicle has already been built and successfully tested on a project involving the sinking of piles under auxiliary structures at Yamburg.

The thermodrill breaks up the ground with the thermal and dynamic action of a high-temperature supersonic gas jet. The diameter of the hole it makes depends on the rate of the drilling, although it will ordinarily range between 100 and 250 mm. The thermodrill can, however, make holes up to 450 mm in diameter.

As compared with methods employed in the construction of pile foundations, the thermal process offers the advantage of low energy consumption. It no longer takes a pile driver to sink a pile, and the thermodrill reduces damage to the environment and the permafrost regime to the minimum. The thermodrill is two-three times more efficient. It is almost never going to wear out, and it can be used to drill holes of different diameters.

Nevertheless, despite all the positive features of this process, the fact that the effect it will have on the sides of the hole and on the subsequent adherence

of the pile to the soil has not yet been studied, the thermodrill has yet to see any extensive use in construction operations.

A definite interest has also been shown in tests of a system whereby the piles are driven into predrilled holes of equal or smaller diameter. The drill-and-drive method would cut the manpower required to sink a pile, make it possible to eliminate the "wet" processes involved in these operations and shorten the time required for the piles to freeze.

The Land Construction Engineering and Organization Section of Minneftegazstroy's Council on Science and Technology has studied the problems involved in improving methods of building pile-supported foundations in the permafrost of the Yamburg field. The section recommended that NIIOSP [Scientific Research Institute of Foundations and Underground Structures], Fundamentproyekt [State Institute for the Planning and Design of Foundations and Substructures] and the Kazakh Polytechnical Institute undertake a crash program of research focusing on methods of sinking piles in permafrost and, on the basis of the results of this research, develop an optimum method of driving piles under these conditions.

Urgent as well is the need to conduct a program of tests of the piles themselves with the objective of determining their load-bearing capacity under natural conditions. Together with Fundamentproyekt, YuzhNIIGiprogazstroy should accelerate work on the development of a program of tests, with the customer then undertaking to conduct these tests.

Particular attention should be given to the development of equipment which would be able to perform the entire range of operations involved in drilling holes and driving piles in permafrost. The Gazstroy Mashin special design office has been given the task of developing equipment for flame-drilling holes and driving piles, while it has been proposed that together with NIIOSP, Mintransstroy's Gazstroy mekhanizatsiya planning and design office develop the design documentation for a self-propelled machine with interchangeable equipment for performing the entire range of operations involved in driving piles.

More efficient exploitation of the load-bearing capacity of the foundation soils and the development of a standardized design for components of the null cycle and the frame of a structure, in which the horizontal forces are absorbed by a system of tie beams, will make it possible to increase the distance between piles and thereby reduce the number of them required 1.5-fold.

Greater industrialization of the design and construction of flooring over ventilated underground structures is another way to achieve substantial reductions in manpower costs. Efforts in this direction undertaken jointly by Fundamentproyekt, SibNIPgazstroy, Glavvengoygazstroy and other organizations have made it possible to achieve a substantial level of industrialization of operations involved in the null cycles of paneled frame structures.

Recommended as a basic solution has been the use of industrial orthotropic plates meeting all heat-engineering requirements and mounted on the system of tie beams. This would make it possible to eliminate such labor-intensive operations as the construction of the base plate and the installation of heat insulation.

Because the natural and climatic conditions in which the field is located pose so many difficulties, we need to turn the construction site at Yamburg into an assembly site. This can be done by going to better, more efficient industrial methods of construction.

YuzhNIIgiprogaz and SibNIIgazstroy have developed a fundamentally new design for a combined gas treatment facility which makes extensive use of modular pontoons. This will make it possible to move the operations involved in the basic construction of the facility and the installation of the processing equipment into the factory and then at the construction site itself to limit operations essentially to the assembly of the prefabricated components of the structure. Each one of these pontoon units will weigh between 260 and 300 tons. Future plans call for the development of supermodules weighing up to 1000 tons.

The mobile structures which can be assembled and then disassembled, structures incorporating the SKZ structural design concept, have yet to see any extensive employment in the development of plans for public and auxiliary buildings or for facilities for construction and operations organizations. The Serpukhov Structural Component Combine now fabricates an extensive range of these buildings—pools with sports facilities, clubs, storage facilities for industrial and food products, general-purpose production facilities and machine and repair shops. The use of SKZ will make it possible to reduce manpower costs at the assembly site substantially.

Unfortunately, however, the Kansk component packages fabricated by the enterprises of Minmontazhspestroy [Ministry of Installation and Special Construction Work] cannot be used in the part of the country in which the Yamburg field is located. Minmontazhspestroy organizations should clearly undertake efforts to improve these components and the industrial production technology involved in the fabrication of them with the objective of making them suitable for use at temperatures as low as  $-50^{\circ}\text{C}$ .

In view of the geocryological and soil conditions in this part of the country, it has been decided to build all product pipelines and operational supply lines above the ground. YuzhNIIgiprogaz has been given the task of developing a standardized series of support components to be prefabricated and used not only for its own projects, but in the planning and design work undertaken by subcontracting design organizations. The industrialization of construction operations also requires the development of standardized series of modular metal sanitary engineering facilities (wells, central heating units etc.).

As we have seen over the course of field construction operations to date, a number of questions and suggestions will be put forward during the construction and assembly operations themselves with the objective of improving on some aspect of the design, structure or engineering. To make it possible to solve all problems quickly and efficiently and to insure effective monitoring of all construction operations, it will be essential as early as the site preparation phase to set up an inventory oversight and field planning and design department and post it directly to Yamburg.

Problems having to do with either engineering or organization which arise during the construction of operational support facilities at the Yamburg gas condensate field must be solved in an integrated, harmonious way through creative collaboration among scientific research, planning, design, construction and operational organizations.

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OIL AND GAS

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BEST COLLECTIVES IN INDUSTRY POST RESULTS, OBLIGATIONS FOR 1984-85

Moscow NEFTYANOYE KHOZYAYSTVO in Russian No 5, May 85 pp 16-24

[Article by R. S. Gorshkova, N. N. Aleksatkina, L. I. Zatsepina, A. A. Nikol'skiy and Ye. N. Anastasyev under the rubric "Approaching the 27th CPSU Congress": "Competition of Collectives of Sectorial Enterprises and Organizations"]

[Excerpts] In 1984 sector workers delivered 592.4 million t of petroleum with gas condensate to the national economy, and above-plan recovery of associated gas amounted to 307.9 m<sup>3</sup>. Drilling enterprises and organizations drilled through 27.4 million m of rocks, thus exceeding the volume sunk last year by 6.5 percent and more. In 1984 Minnefteprom [Ministry of the Petroleum Industry] enterprises and organizations handled R8.77 billion in capital investments, and the amount of fixed capital introduced increased by 4.2 percent compared to the previous year and the volume of uncompleted production decreased.

An economic effect totalling over R310 million was made possible through means which saved material resources and accelerated scientific-technical progress. In the struggle to make efficient use of power production resources, the petroleum industry workers saved 1,717.7 million KW-hours of electric power.

The best results with regard to fulfilling their plan assignments and the social obligations which they had taken on were achieved by 12 collectives, which, based on their work totals for 1984, were awarded the Red Challenge Banner of the CPSU Central Committee, the USSR Council of Ministers, the AUCCTU and the Komsomol Central Committee, including nine collectives which were put on the Exhibition of USSR National Economic Achievements All-Union Board of Honor.

THE YUGANSKNEFTEGAZ [Yugansk Oil and Gas Production Association], which is part of GLAVTYUMENNEFTEGAZ [Main Administration for Petroleum and Gas Production, Tyumen Oblast]. Since the beginning of the 11th Five-Year Plan this collective has initiated all-union social competition among the sector's enterprises and organizations, having taken on an intense counterplan for oil recovery which exceeds the five-year plan assignment by 3,827 million t (and this includes 0.7 million t for 1984), with which plan it successfully coped.

The 1984 counterplan for oil recovery was fulfilled by 100.3 percent, and 203,300 t of above-plan oil were recovered, and the plan for gas recovery was fulfilled by 102 percent, with 33.18 million m<sup>3</sup> recovered over the assignment. Compared to 1983, oil recovery levels increased by 4.5 million t, and this increase amounted to 19.6 million t for the years of the 11th Five-Year Plan period.

The association is doing a lot of work on its stock of wells, the result of which is that the interservice operating period for these wells has increased by seven days compared to the plan, thus being raised to 507 days, and the operating coefficient for oil wells came to 0.963, against a plan coefficient of 0.961.

Labor productivity was increased by 1.2 percent against the plan, and R19.5 million of above-plan profits were earned. In 1984, 2,886,000 m of wells were sunk, and of this amount, 100,000 m were above the plan, with a socialist obligation of 23,000 m, and 113 above-plan wells were turned over for production.

Overall drilling rate speed increased by 5 percent compared to 1983, penetration per single drilling rig crew increased by 1,000 m, and production costs per meter drilled were reduced by 1.5 percent against the plan. In 1984 1.7 t of metal, 1,684 KW-hours of electric power, 268 t of standard fuel and 4,080 hectojoules of thermal energy were saved above the prescribed assignment.

The association is carrying out organizational effort regarding the comprehensive automation and tele-automation of the oil extraction industry. In 1984, 340 grouped measuring devices were connected to the tele-automation systems, thus providing monitoring of the operation of 2,530 wells.

The workers, engineering and technical personnel and office workers of the Yuganskneftegas Association are determined to carry out their oil recovery assignment for the 11th Five-Year Plan period by the 68th Anniversary of the Great October Revolution. It has been decided that 1985 will see an increase in labor productivity of 1 percent against the plan, a 0.5 percent reduction in the production cost of output, and the setting up of an above-plan savings fund of R725,000, and that two days per year will be spent working on the saved resources.

THE TATNEFT [Tatar Petroleum] ADMINISTRATION IMENI V. D. SHASHIN. On 16 December 1984 Tatar oil workers fulfilled the plan for four years of the 11th Five-Year Plan period ahead of schedule, having recovered over 2.2 million t of above-plan petroleum, 31.5 million m<sup>3</sup> of associated gas, and having drilled through 188,000 m of rock above their four years' assignment. Ahead of schedule, on 30 December 1984, the plan for oil recovery was fulfilled, and 403,400 t of oil above the prescribed assignment, along with five million m<sup>3</sup> of gas, with socialist obligations of 160,000 t of oil and two million m<sup>3</sup> of gas.

The collective has increased its labor productivity by 1 percent against the plan, earned R12 million in above-plan profits, and sales of above-plan output

came to R13.2 million. The interservice well operating period also exceeds the plan indicator for wells and SSHN's [sucker-rod pumps], coming to 380 days, and for ETsN's [electric centrifugal pumps], has reached 455 days.

According to plan, the association is automating its oil-recovery facilities, and 98.4 percent of all Tatar oil is recovered with completely automated fields, which surpasses the sectorial assignment for the end of the five-year plan period.

By virtue of having introduced new equipment, advanced production procedures, rationalization, and dissemination of the experience of the best collectives in 1984, an economic effect totaled R26 million. The socialist obligations for saving materials, raw materials, and electrical and thermal have been overfulfilled: 1,426 t of cement were saved, 1,704 m<sup>3</sup> of lumber, 78 t of rolled ferrous metals stock and 49.1 million KW-hours of electric power.

Taking part in the All Union Competition for a Worthy Greeting for the 40th Anniversary of the Great Victory of the Soviet People in the Great Patriotic War, for the 50th Anniversary of the Stakhanovite Movement and for the 27th CPSU Congress, Tatar oil workers have taken upon themselves obligations to recover 150,000 t of oil and 400,000 m<sup>3</sup> of gas above the plan, and to work off two days per year on economized resources by their economising routine.

The KUYBYSHEVNEFT [Kuybyshev Petroleum Extraction] ASSOCIATION. This collective fulfilled its plan for oil and gas recovery for four years of the five-year plan period ahead of schedule, on 18 December 1984. The collective also recovered 628,200 t of oil and 225.7 million m<sup>3</sup> of gas above their counter plan and sold their output in the amount of R17.5 million. They drilled through 51,000 m of rock and turned 45 wells over for operation.

They successfully fulfilled their plan assignments and socialist obligations for 1984. Their plan for oil recovery was fulfilled by 101.3 percent, and above-plan recovery levels reached 248,300 t at yearly obligations of 150,000 t. By using new methods to increase oil recovery, 72,000 additional t of oil were recovered.

The plan for gas recovery was 103.5 percent fulfilled, and above-plan recovery came to 35.8 million m<sup>3</sup>. A total of R6.1 million of output was sold. Labor productivity exceeded the planned figure for oil recovery by 1.8 percent and for drilling by 7.1 percent. Construction costs for well construction were reduced by 10 percent compared to the plan. The utilization factor for the operating well stock comes to 0.944 at a planned factor of 0.942. The interservice operating period for wells equipped with UETsN's [electrical centrifugal pump installation] increased by 4 percent compared to the plan, coming to 338 days, and for wells equipped with sucker-rod pumping units--to 364.6 days.

Considerable successes have been achieved by the Mirnenskiy UBR [Drilling Operations Administrations], which is constructing wells in Western Siberia. In 1984 they drilled 925,000 m worth of wells at planned footage of 880,000 m.



This leading collective stepped forth as the initiator of the 1985 socialist competition for sinking 1 million m of footage per year in Western Siberia and for turning wells over on a turnkey basis.

In 1984, fixed capital assets totalling over R90 million were put into operation, which assets included 196 oil wells, 120 km of main oil and gas pipelines, over 21 km of hard-paved motor vehicle roads and 73 km of power transmission lines.

A total of R12.2 million was saved in 1984 by the introduction of new equipment and advanced production methods, the continued development of efforts regarding rationalisation, and through inventive activity.

In striving to give a worthy greeting to the 40th anniversary of the Great Victory, to the 27th CPSU Congress and the 50th anniversary of the Stakhanovite Movement, the workers of the Kuybyshevneft Association have taken on obligations for 1985 to fulfill the five-year plan for oil recovery by the 68th anniversary of the Great October Revolution, and to recover 2.1 million tons of oil as part of the counter plan, which surpasses the five-year assignment, and to work off 2 days on economized raw materials, materials and fuel.

**THE GROZNEFT [Groznyy Petroleum Recovery] ASSOCIATION.** Since the beginning of the 11th Five-Year Plan, the workers of this association have recovered 714,000 t of above-plan oil and gas condensate and 388 million m<sup>3</sup> of above-plan gas, have sold R35 million of commodity production and have made R4.8 million in profits. The association's drillers have drilled 7,600 m above the plan, and have insure fulfillment of the plan for increased commercial oil reserves and have completed construction and turned over 88 wells to the client.

The gas recovery plan for the 4th year of the five-year plan was fulfilled ahead of time on 20 December 1984, and for oil recovery, on 22 December. Above-plan recovery levels reached 147,100 t for oil and 65 million m<sup>3</sup> for gas, sales of commodity production reached R6.9 million, profit levels reached R7.4 million, 5,900 meters of rock were drilled through and 15 wells were turned over for operation. The plan figure for labor productivity was overfulfilled for the year by 3 percent and 85.2 percent of the recovered petroleum was classed in the highest category.

The competition in honor of the 40th anniversary of the Victory, under the motto "40 Weeks of Shock Work for the 40th Anniversary of the Great Victory" has taken on unprecedented scope. The association's oil workers took it upon themselves to fulfill, and did fulfill their plan for 4.5 years of the 11th Five-Year Plan period by this anniversary, and have also taken it upon themselves to recover 25,000 t of oil and gas condensate as part of their counter-plan, and to work off two days per year on economized materials, fuel and power, to be credited to their schedule for economizing and searching for internal resources.

**THE NIZHNEVOLZHSKNEFT [Lower Volga Petroleum Production] ASSOCIATION.** The association collective reported, ahead of schedule, on 20 December 1984, that they had completed their year's assignment for oil and gas condensate recovery;



the yearly plan for gas recovery was fulfilled on 10 December, and for well footage drilled--on 15 December. The plans for increasing reserves of minerals were fulfilled in full.

The association's workers recovered 511,000 t of oil and 231.7 million m<sup>3</sup> of gas, and drilled 18,400 m above the plan established for four years of the 11th Five-Year Plan. Since the beginning of the five-year plan, the association's drillers sank 132,000 m of footage and constructed 124 wells above the plan.

As a result of using new methods to enhance oil production from formations, additional recovery of 3.5 million t of oil was effected during four years of the five-year plan. During 1984, labor productivity increased by 3.7 percent against the plan, and production costs for drilling were reduced 5.1 percent.

The improvement in the caliber of well-servicing operations and the quality of capital and routine repairs, and the improvement in the utilization of the available well stock has increased their operational coefficient in 1984 to 0.952, and has increased their interservice operating time from 320 to 357 days. The economic effect derived from having implemented these measures came to R7,131,000, including R1,500,000 during 1984.

During four years of the five-year plan, a total of 13.05 million KW-hours of electric power, 102,000 hectojoules of thermal energy, 5,025 t of boiler furnace fuel were saved, including, during 1984, 2.7 million KW-hours of electric power, 17,180 hectojoules of thermal power and 610 t of boiler furnace fuel.

On the whole for the association, the work carried out with brigade procedures amounted to 65.2 percent, which corresponds to the indicator planned by Minnefteprom for 1985. Of the drilling and drilling rig erecting brigades, 80.6 percent work on brigade contracts.

The Nizhnevolzhskneft Association set itself the task in 1985 of recovering 12,000 t of oil, 30 million m<sup>3</sup> of gas, and of drilling 3,000 m of footage above the plan, as well as completely fulfilling its 11th Five-Year Plan Assignment for oil and gas recovery ahead of schedule, by the anniversary of the 68th anniversary of the Great October, as well as its 4.5 year assignment for well construction.

THE PERMNEFT [Perm Oblast Oil Recovery] ASSOCIATION. This association fulfilled the plan for four years of the 11th Five-Year Plan for oil recovery ahead of schedule, by 17 December 1984. Above-the-plan recovery levels reached 77,500 t of oil and 22 million m<sup>3</sup> of gas, and R3,705,000 worth of output were sold. Labor productivity was increased by 1.3 percent. Above-plan profits came to R6,095,000.

In 1984, the association's drilling enterprises sunk 903,700 of footage and turned over 464 wells, which number includes 8 wells above the set assignment.

The association collective fulfilled the plan for introducing new equipment and progressive production methods (two UPT-1-150 units, which are mounted on a T-130 tractor and are used for well-servicing work, were introduced). PermNIPIneft [Perm Oblast Scientific Research and Planning Institute for Petroleum] developments have found wide application, such as the installation of 642 sucker-rod pumps equipped with one-piece cylinders and metal plungers at a plan quota of 450 units effected a saving of R600,000. A total of R8 million has been saved by using new equipment and advanced production methods. In 1984, 8.4 million KW-hours of electric power, 980 hectojoules of thermal energy and 348 t of boiler furnace fuel were saved.

The plan for four years of the five-year plan was fulfilled ahead of schedule by the Krasnokamskneft, Osinskneft and Chernushkanefit NGDU's [Petroleum and Gas Production Administration], the Permneftegaz [Perm Oblast Oil and Gas Administration], the Kungurskiy URB [Exploratory Drilling Administration], GPK [not further expanded], dozens of drilling and rig-building brigades, and the structural-search drilling brigades of supervisor N. P. Komarova and the construction and installation workers of construction superintendent N. Ye. Popov have already reported their fulfillment of the five-year plan.

Having spread socialist competition for a worthy greeting to the 27th CPSU Congress, the 40th Anniversary of the Great Victory and the 50th Anniversary of the founding of the Stakhanovite Movement, the association collective decided to fulfill the five-year plan for oil recovery ahead of schedule--on 12 December 1985--and to recover 150,000 t of oil and 20 million m<sup>3</sup> of gas above the plan and to work off two days on economized materials, raw materials and electric power.

THE BASHNEFT [Bashkir Petroleum Recovery] ASSOCIATION'S ARLANNEFT PETROLEUM AND GAS PRODUCTION ADMINISTRATION. On 4 December 1984 the NGDU collective reported their ahead-of-schedule fulfillment of the directive oil recovery plan for four years of the five-year plan, and on 29 December, their fulfillment, ahead of schedule, of the 1984 oil recovery assignment.

The oil recovery plan was fulfilled by 100.8 percent, and 71,100 t of above-plan oil were recovered at an obligation of 45,000 t, with 184 new oil wells being constructed and put into operation where the plan called for 179. The proportionate disbursement of the maintenance personnel work force calculated per single well was reduced 4.1 percent against that achieved in 1983. Labor productivity was increased 1.2 percent against the plan, and 75 percent of the workers worked according to the brigade form of organization and incentive of labor.

This petroleum and gas production administration successfully fulfilled its plan for introducing new equipment, advanced production procedures and measures for the scientific organization of labor. Sucker-rod pumps with one-piece cylinders were introduced in 500 wells, salt deposit inhibitors in 120, paraffin inhibitors in 549 and 13 operations were conducted to introduce special solvents to combat asphalt-resin-paraffin deposits. The annual economic effect derived from introducing new equipment and advanced production procedures

amounted to R606,000. Sixty-four persons were involved in doubling-up of skills at a planned number of 60. Savings of 3.63 million KW-hours of electric power, 14,500 hectojoules of thermal energy and 3,652 t of standard fuel were realized.

Expenditures for a number of measures taken to improve labor conditions and safety procedures came to R74,500.

Coming into the final year of the five-year plan and striving to greet the noteworthy dates--the 27th CPSU Congress, the 40th anniversary of the Great Victory and the 50th anniversary of the Stakhanovite Movement, this oil and gas production association has taken up increased socialist obligations for 1985: to recover 35,000 t of above-plan oil, including 14,000 t by the 40th anniversary of the Great Victory and 21,000 t by the 50th anniversary of the Stakhanovite Movement; to raise labor productivity by 1 percent against the plan and to work off two days per year on the materials, fuel and electric power which has been saved.

THE NIZHNEVARTOVSKNEFTEGAZ [Nizhnevartovsk Oil and Gas Production] ASSOCIATION'S BELOZERNEFT PETROLEUM AND GAS PRODUCTION ADMINISTRATION. This oil and gas production administration's collective worked with terrific creative enthusiasm in the 4th year of the 11th Five-Year Plan and ahead on schedule, i.e. on 28 December 1984, fulfilled the intense yearly plan for the recovery of 62.14 million t of oil (62.68 million t had been recovered prior to the year's end). Counting from the start of the five-year plan period, 264,848 million t of oil were recovered at a plan assignment of 258,762 million t and at a plan for the total years' assignments of 264,560 million t, the plans were overfulfilled, respectively, by 6.086 million t and 0.288 million t.

Labor productivity rose by 1.9 percent in 1984 at an obligation of 1 percent. As a result of improvements in the quality of routine repairs and the introduction of the progressive brigade form of labor organization the interservice operating period for their wells was increased by five days against the established plan.

The use of new methods to enhance oil production in the development of the fields, (such as injecting water and gas mixtures) has permitted a saving of R1,773,000.

This oil and gas production administration has placed a great deal of emphasis on its productive capacities: the plan for putting wells into operation after their having been drilled was fulfilled by 115.2 percent, and three well clusters above the plan were constructed following the conclusion of drilling operations. In addition, two km of high-voltage power transmission lines were put into operation.

In striving for a worthy greeting to the 27th CPSU Congress, the 40th anniversary of the Great Victory and the 50th anniversary of the Stakhanovite Movement, the administration collective took on the following obligations for 1985: to complete their five-year plan oil recovery assignment by USSR Constitution Day, to recover 12,000 t of above-plan oil, including 4,000 t by



9 May 1985, to increase labor productivity by 1 percent against the plan and to operate 2 days on economised resources.

THE SURGUTNEFTEGAZ [Surgut Oil and Gas Production] ASSOCIATION'S SURGUT UBR [Drilling Operations Administration] No 1. This UBR's 1984 plan quota for footage was 101 percent fulfilled, their having drilled 692,600 m and turned over 287 wells for operation at a plan number of 276.

Thanks to introducing a combination of measures aimed at improving production efficiency and the quality of their work, and to their having achieved high final results with the least possible outlays of raw materials, materials, electric power and fuel during 1984, they saved 826,000 KW-hours of electric power, 20,600 hectojoules of thermal energy and 113 t of standard fuel. By taking measures to introduce new equipment and advanced production methods they saved R742,000. GNU [not further expanded] and GAU [not further expanded] drilling bits produced the greatest effect, having made possible an increase in labor productivity, and thanks to their use of polyethylene actide, they succeeded in greatly reducing outlays of chemical reagents.

In 1984, 11 efficiency recommendations and inventions were implemented in the UBR, with an economic effect of R582,200.

The UBR's workers, engineering and technical personnel and office workers, striving to give a worthy greeting to the upcoming 27th CPSU Congress, the 40th anniversary of the Great Victory and the 50th anniversary of the Stakhanovite Movement took up the following socialist obligations for 1985: to drill 8,000 m of above-plan footage, which includes 2,000 m by 9 May 1985.

As a result of the industry's rational behaviour and their zealous use of raw materials and materials, the decision was made to save 520,000 KW-hours of electric power, 10,100 hectojoules of thermal energy and 55 t of standard fuel, and to work two days on economized resources.

THE DRUZHBA MAIN OIL PIPELINE ADMINISTRATION. This administration fulfilled its planned oil pumping assignments for four years of the 11th Five-Year Plan period ahead of schedule, on 12 December 1984, its freight turnover plan was fulfilled by 100.5 percent, and by 102.1 percent since the beginning of the five-year plan.

Thanks to this industry's sound behaviour, R200,000 of above-plan profits were earned, R13,305 since the beginning of the five-year plan period. Their assignments for deliveries of oil for export and for increased labor productivity are being successfully fulfilled.

The administration is witnessing widespread development of competition for the careful expenditure of raw materials, materials and fuel-energy resources, and its collective has come out with an initiative "To Work Two Days Per Quarter on Economised Resources". In 1984, 54,700 KW-hours of electric power, 9,700 hectojoules of thermal energy, 316 t of standard fuel and 36.3 tons of metal were saved.

Implementing new techniques and leading technology during the 4th year of the 11th Five-Year Plan made the work of oil pipeline systems more reliable and yielded a savings of R4.65 million.



The active participation of inventors and innovators in finding solutions to engineering problems made possible the implementation of 1,265 efficiency recommendations into the industry, with a concomitant economic effect of R3.7 million.

In order to further improve labor safety procedures and to sanitize working conditions, provision was made for the timely fulfillment and overfulfillment of the "Comprehensive Plan for Improving the Conditions for Labor Safety Procedures and Sanitary and Sanitizing Measures". In 1984, 145 measures were carried out, for which R205,000 were spent. As a result, working conditions were improved for 208 workers, including 49 women.

The administration has successfully fulfilled its plan for the social development of the collective. Thus, in 1984, three apartment houses, with 4,400 m<sup>2</sup> of floor space were made operational, and since the beginning of the five-year plan period seven apartment houses, with a total area of 11,900 m<sup>2</sup> and two canteens, with 75 seats, have been made ready for use. A rest facility has been expanded and construction is concluding on a 58-bed clinic.

THE BASHNEFTEGEOFIZIKA [possibly Bashkir Petroleum and Geophysical Exploration] TRUST. Working under the motto "One Above-Plan Structure for Each Year of the Five-Year Plan Period", the trust collective achieved successes in improved effectiveness and the quality of their geophysical operations in 1984, as well as in fulfilling their plan assignments and their socialist obligations. They completed their geological assignment ahead of schedule, and prepared 25 geological structures for exploratory drilling, at a plan figure of 23. The yearly assignment regarding volumes of geophysical work was overfulfilled with regard to its estimated cost (at a planned figure of R28.8 million, it was fulfilled at a total of R29.3 million, or 101.7 percent of the plan).

Labor productivity per single worker was increased by 2.3 percent against the plan, the prime costs for geophysical operations was reduced by 0.6 percent and above-plan profits came to R308,000.

Since the beginning of the five-year plan period, 90 structures have been prepared for exploratory drilling work, and five of these were above the plan. In order to accelerate the growth of oil reserves in areas with proven oil presence, 130 promising sections were recommended to be drilled. In the structures which underwent preparation by geophysical methods, 10 oil fields and 14 oil pools were discovered.

The cost for the final geophysical product--the structure--was reduced. Since the beginning of the five-year plan period, the cost per single structure has been reduced from R128,000 to R100,000, which in 1984 alone effected an allocation saving of R3.9 million on geological survey efforts.

The 1984 economic effect derived from the introduction of efficiency recommendations amounted to R250,000.

About R200,000 were expended on the range of measures scheduled to improve working conditions and safety practices, as well as for health-promoting measures in 1984.

**THE MINNIBAYEVSKIY GAS REFINERY IMENI LENIN KOMSOMOL.** This refinery has successfully managed the requirements of the state plan and the increased socialist obligations of the 4th year of the 11th Five-Year Plan period. The plan for sales of output was 100 percent fulfilled, for production of liquid products was 107.3 percent fulfilled, the plan for stripped dry gas by 105.3 percent, for helium by 101.0 percent and the plan for labor productivity was overfulfilled by 3.1 percent. The production cost for output was reduced by 1.5 percent, and R324,000 of above-plan profits were earned.

Contractual obligations for deliveries were fulfilled.

The production of liquid products from the potential increased by 1.2 percent compared to 1983. The rational utilization of existing plant capacities made possible the attainment and sustaining of a high gas utilization rate--95.2 percent--in the Tatar ASSR.

The plant produces two types of products which bear the State Quality Mark: ethane and SPBTZ [not further identified] grade liquid hydrocarbons; the remainder of its output is in the first quality category.

Thanks to its prudent and economical attitude to the utilization of power producing resources, the plant collective saved 7.5 million KW-hours of electric power, 6,250 hectojoules of thermal energy and 700 tons of standard fuel. According to the results of an All-Union Public Inspection of efficiency in the utilization of thermal power resources, raw materials and materials, the refinery was awarded the AUCCTU, the All-Union Komsomol Central Committee and the USSR Gosstab [State Committee for Material and Technical Supply] Prize.

The refinery's rationalizers, who came up with 240 recommendations, contributed greatly to the collective's successful effort. Of these recommendations, 220 were implemented, along with two inventions, and the derived economic effect came to R186,700.

Socialist competition is widely developed within the collective. The collective has decided to produce 4,000 t of liquid products and 11 million m<sup>3</sup> of dry gas and to reduce the prime cost of their output by an additional 0.05 percent by 9 May.

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## OIL AND GAS

### UKRAINIAN OIL, GAS UNITS REPORT 1984 SUCCESSES

Kiev NEFTYANAYA I GAZOVAYA PROMYSHLENNOST in Russian No 1, Jan-Mar 85 pp 1-2

[Article: "Plans for the Fourth Year of the 11th Five-Year Plan Period Have Been Completed Successfully"]

[Text] Last year the efforts of the laboring collectives of USSR Ministry of Geology, the All-Union Industrial Association Ukgazprom [Ukrainian Gas-Industry Association], Ukrneft [Ukrainian Oil Production Association] and UkSSR Glavneftekhimprom [Main Administration for the Petroleum Refining and Petrochemical Industry] organizations were aimed at increasing production efficiency, economizing on all types of resources, and fulfilling annual plans and socialist commitments ahead of schedule.

#### Ministry of Geology, Ukrainian SSR

The collectives of UkSSR Ministry of Geology organizations and enterprises successfully fulfilled all technical and economic indicators for 1984 plans and socialist commitments. The year's goals for growth of oil, gas and condensate reserves were overfulfilled.

USSR GKZ [State Committee for Mineral Reserves] has confirmed reserves for three new oil and gas fields. Six oil and gas fields--the Khar'kovtsevskeye, Raspashnovskoye, Novoukrainskoye, Sementsovskoye, Fontanovskoye and Shchurovskoye--were turned over for operational development. Nine oil and gas fields were discovered.

Thirty-four productive exploration wells were turned over to oil and gas recovering enterprises.

Exploration of the Yablunovskoye gas and condensate field was completed ahead of schedule.

Mesozoic sediments bearing commercial amounts of oil and gas were identified for the first time at the Lopushnyansk area in the Pokutsk Carpathians.

The plan for speed in drilling deep wells was greatly overfulfilled.

Thanks to increased introduction of new equipment and advanced technology, further improvement in work organization and reduction in worktime losses, the goal for labor productivity growth in geological exploration was

overfulfilled by 1.5 percent and in deep drilling by 3.4 percent, prime production costs were reduced by almost 2 percent versus the plan, and 2 million rubles of profit above the plan were obtained.

The collectives of 77 drilling brigades and field parties met the 11th Five-Year Plan goal ahead of time.

#### All-Union Industrial Association Ukgazprom

The state plan for 1984 and the fourth year of the 11th Five-Year Plan period was carried out successfully in terms of production volume and basic technical and economic indicators.

The year's plan for drilling gas wells and turning them over for operation was completed ahead of time.

The plan was surpassed by 998 million m<sup>3</sup> of natural gas recovered, more than 20,000 meters of rock drilled through, and four high flow rate gas wells turned over for operation.

Above-plan deliveries of natural gas were made to ferrous-metallurgy and power-engineering and electrification enterprises, municipal services and other customers.

A large amount of work was done jointly with construction organizations on the development of trunk gas pipelines and the system for supplying gas to the republic's consumers. Two thousand one hundred eighty-one wells were overhauled or repaired, 319 gas-transfer pumping units and 53.2 km of pipeline were repaired, and 1,639 km of gas pipeline equipped with compressor stations were put into operation.

By introducing brigade forms for organizing work and internal cost accounting, about 8 million rubles' worth of materials and fuel and power resources were saved, labor productivity was increased 2.2 percent, and prime production costs were reduced 2.3 percent in 1984.

Housing, cultural and domestic-services conditions for gas-field workers were improved: 68,000 m<sup>2</sup> of housing, preschool institutions for 850 children, and schools seating 1,742 pupils were turned over for operation in 1984.

The brigade of I. I. Rybchich who initiated the socialist competition within the industry reported completion of the five-year plan's goals for drilling gas wells on 16 June 1984 and N. G. Yanko's brigade reported doing so on 23 December, and 51 drilling brigades completed the task for the first 4 years of the five-year plan ahead of time.

Collectives of association enterprises and organizations undertook the following socialist commitments for 1985: to meet 11th Five-Year Plan goals ahead of schedule--on 22 June for well drilling and on 21 October for gas recovery and product sales; to raise labor productivity by 1.4 percent and to reduce prime production costs by 0.5 percent versus the plan; to put two fields and 36 new wells into operation; and to operate for 2 days during the year on fuel and power resources that have been saved.



## **Ukrneft Production Association**

Ukrneft enterprises and organizations successfully carried out the 1984 plan for all basic technical and economic indicators.

The year's plan for recovering oil and gas and for drilling wells was fulfilled ahead of time.

The plan was exceeded by 55,500 tons of oil and 97.6 million m<sup>3</sup> of gas recovered and 23,700 meters of wells drilled through, including 14,100 meters in West Siberia. The plan for delivering oil and gas to customers was fulfilled.

The labor productivity goal was met 102.1 percent, specific manpower per operating well was reduced by 1.4 percent below 1983's and the prime cost for producing commodity output was reduced by 1.5 percent.

In 1984, 61 oil and 26 gas wells were put into operation versus the planned 45 and 7, respectively.

Thousands of tons of oil were obtained by organizational and technical measures aimed at accelerating the introduction of new oil and gas wells into operation, by improving utilization of the operating-well inventory, and by intensifying recovery.

The plan for new equipment was carried out fully: last year the association introduced 101 measures for new equipment, progressive technology and mechanization and automation of production processes, which yielded an economic benefit of more than 7 million rubles.

About 3,000 specialists took part in rationalizing and invention, and more than 2,000 rationalizers' suggestions were introduced into production work, for an economic benefit of about 4 million rubles.

Through repeat use of the petroleum mix of pipe and the thrifty consumption of rolled metal, casing, powdered clay, chemical reactants and weightening agents, 950,000 rubles' worth of materials were saved.

Great savings of electricity and heat, furnace-and-boiler and diesel fuels, and gasoline were made.

Three times in 1984 Ukrneft was awarded the challenge Red Banner of the Ministry of Petroleum Industry and the Central Committee of the Trade Union of Oil and Gas Industry Workers for results in the All-Union socialist competition.

Five drilling brigades, eight overhaul brigades and one underground well-repair brigade have completed their five-year plans. The collectives of 45 oil and gas recovery brigades, 81 drilling brigades, 35 overhaul brigades and 24 underground well repair brigades, as well as 19 derrick-erecting brigades, reported fulfillment of the plan for the first 4 years of the five-year plan period ahead of schedule.

The Ukraine's oilfield workers committed themselves to recovering 40 million m<sup>3</sup> of gas and 24,000 tons of oil and gas condensate, to drilling 3,700 meters of oil and gas wells above the established goal, using resources that will

have been saved, turning over for operation three wells above the plan, and penetrating 1 million meters of oil and gas well at West Siberian fields.

#### Glavneftekhimprom of UkSSR

The state plan for 1984 was completed successfully for all basic technical and economic indicators. Plans for commodity-output volume, sales of output and labor productivity were overfulfilled. Production volume rose 7.5 percent, labor productivity 6.4 percent, over 1983's.

By improving production-capacity utilization, reducing idle equipment time and saving raw and other materials, the plan for producing industrial-grade kerosene was fulfilled 100.8 percent, toluene 109.7 percent, firebox mazut 100 percent, asphalt 103.3 percent, coke 101.2 percent, lubricating oil 101.9 percent, grease 104.3 percent, industrial-grade carbon 100.3 percent, motor-vehicle tire casings 101.2 percent, conveyor belts 100.5 percent, molded and unmolded rubber-engineering products 103.1 percent and consumer goods 102.5 percent, including 101.3 percent for cultural and domestic-services purposes.

The share of output with the Emblem of Quality exceeded 42 percent.

Through new-equipment and progressive-technology measures, 16.5 million rubles were saved and 2,269 people were provisionally released from employment.

Worktime losses were reduced 3 percent below 1983's.

The Ostrog Tire-Repair and Chernovtsy Rubber-Footwear Plants made meaningful contributions to the successes achieved.

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OIL AND GAS

RAISE DRILLING EFFICIENCY AT ASTRAKHAN GAS CONDENSATE FIELD

Moscow GAZOVAYA PROMYSHLENNOST in Russian No 7, Jul 85 p 9

[Article by R.S. Vorob'ev, asst. chairman, Scientific Technical Council: "Raise Drilling Efficiency at the Astrakhan Gas Condensate Field"]

[Text] An on-site conference of the Scientific Technical Council of the Ministry of the Gas Industry was held in Astrakhan to discuss "Construction and Scientific Technical Solutions for Improving Drilling Technology and Efficiency at the Astrakhan Gas Condensate Field." The conference was attended by specialists from the Ministry of the Gas Industry and its scientific research and design organizations, the Ministry of the Oil Industry, the USSR Ministry of Geology, the USSR Ministry of Higher Education, Astrakhangazprom and drilling organization managers.

It was pointed out that a series of organizational and technical procedures has been carried out recently to improve drilling performance in the Astrakhan field. The North Caucasus Scientific Gas Research Institute and the Volga/Urals Scientific Gas Research and Planning Institute, in cooperation with Orenburggazprom and Astrakhangazprom, have developed a set of methodological, regulatory and training documentation and standards for problem-free drilling, well operation and surface facility management in highly sour fields. The North Caucasus Scientific Gas Research Institute and Astrakhangazprom have worked out and put into practice industrial methods for rigging up drilling units, designing production wells and manufacturing reliable H<sub>2</sub>S-resistant seals. In cooperation with the Volgograd Scientific Oil Research and Planning Institute, a mud formula for drilling into a producing formation was developed and put into practice. The All-Union Scientific Gas Research Institute formulated and submitted to the Ministry of Ferrous Metallurgy technical specifications for H<sub>2</sub>S-resistant casing, tubing and drill pipe.

In spite of these measures, drilling performance has not measured up to requirements to accelerate development of the new gas province. To a large extent, efforts to accelerate the pace of drilling are hindered by inefficient organization, unsatisfactory development of a scientific base, the lag in adopting mass production methods for H<sub>2</sub>S-resistant equipment, oilfield pipe, control and metering instrumentation and automated designs.

In order to raise drilling efficiency at the Astrakhan gas condensate field, improve the organization and administration of drilling services and promote better economic and technical performance in completing high-quality wells, the

Scientific Technical Council recommends the following: the engineering staff of drilling enterprises should specialize in the drilling and completion of wells; effective mud formulas for tailing into producing formations, salt and subsalt beds should be developed; an optimal bottom-hole drill string assembly should be designed; well completion and stimulation technology must be improved; efficient technological processes and technical guidelines developed by the scientific research organizations of various ministries must be put into practice; and wells should be drilled scientifically.

The office in the Ministry of the Gas Industry which oversees the drilling of gas and gas condensate wells is responsible for submitting requests to the Ministry of the Chemical Industry to arrange for the production of expanding sediment-resistant cement developed by the Ufimskiy Petroleum Institute, as well as formulating recommendations on the development of interdepartmental coordination guidelines on drilling and completing wells in the Caspian Basin.

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## OIL AND GAS

### IMPROVE DRILLING PRACTICES AT YAMBURG

Moscow GAZOVAYA PROMYSHLENNOST in Russian No 7, Jul 85 p 7

[Text] The development of Western Siberian fields will determine the development of the gas industry in the 12th Five-Year Plan. Development of the Yamburg field poses complex drilling problems: sharply increased drilling requirements, greater drilling economy and reliable well completions under permafrost conditions. Efficient development of this field requires the implementation of new technology, methods and drilling practices to complete gas production wells.

Drilling practices at the Yamburg field were discussed at a conference of the Scientific Technical Council of the Ministry of the Gas Industry attended by specialists from the ministry, gas industry scientific research and design institutes and the Ministry of Construction of Oil and Gas Enterprises, leading names from production associations and the Eastern Permafrost Institute of the Siberian Branch of the USSR Academy of Sciences. It was recognized that the Yamburg field presents complex engineering and permafrost conditions requiring the greatest possible number of wells per pad.

Current experience in drilling slanted oil wells in permafrost rock provides the know-how for drilling gas wells with highly reliable completion designs and cementing.

Calculations done by the All-Union Scientific Research Institute for Gas and the Tyumen Gas Scientific Research Institute of the State Planning Institute for Gas indicates the possibility of increasing the number of wells per pad, which would greatly reduce the number of pads needed at Yamburg field, thus reducing pad construction operations as well as the need for access roads and relocating drilling rigs. The total network of field roads and gathering lines would be reduced. Increasing the number of wells per cluster will greatly increase drilling economy by optimizing work time and reducing organizational effort.

In line with the suggestions made by the Tyumen Gas Scientific Research Institute of the State Planning Institute for Gas and the All-Union Scientific Research Institute for Gas, the Scientific Technical Council recommends that Yamburg field be developed under the following guidelines: basically drill slanted wells in clusters; use drilling rig equipment designed by the Tyumen Gas Scientific Research Institute of the State Planning Institute for Gas; space cluster wells 40 m apart subject to later revision of spacing guidelines depending on actual local permafrost conditions; and site cluster wells on pads in a straight line.

Prior to pouring the pads, the Tyumen Gas Scientific Research Institute of the State Planning Institute for Gas, the All-Union Scientific Research Institute for Gas and the Southern Scientific Research Institute of the State Planning Institute for Gas recommend surveying permafrost conditions at each site for engineering and construction purposes; locating pads for slanted cluster wells producing from the Senomanskiy and Valanzhskiy formations with maximum utilization of vertical well pads selected earlier in Yamburg field; determining casing size and the number of wells per cluster on the basis of a development plan which maximizes gas production and economic performance and takes thickness of the producing zone into consideration.

The Tyumen Gas Scientific Research Institute of the State Planning Institute for Gas is charged with developing the procedures and guidelines in all areas related to the drilling and completion of production wells and the development of slanted well technology as well as technical documentation covering all surface production, technological and retail facilities located at the pads to provide full support of the cluster well project.

It is recommended that an observation well be drilled first at each cluster to analyze the characteristics of the producing zone. The gathering line should then be laid to the cluster for use as a water line when drilling production wells.

Soyuzgazgeofizika Trust has pointed out the need for timely geophysical research to support slanted drilling operations.

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OIL AND GAS

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FURTHER DEVELOPMENT DRILLING AT MEDVEZHYE FIELD

Moscow GAZOVAYA PROMYSHLENNOST in Russian No 7, Jul 85 p 5

[Article by O.M. Yermilov, V.V. Strizhov, V.A. Tugolukov and V.A. Fatikhov, Tyumen Scientific Research Institute of the State Planning Institute for Gas and Nadya Gas Industry: "Additional Development Drilling Project in Medvezhe Field"]

[Text] In order to increase ultimate gas production, effective utilization of the production resources of the gas treatment and pipeline system, gas production at Medvezhe field must be held steady as long as it is economically feasible.

A depletion analysis of Medvezhe field by area shows that north of Gas Treatment Facility No. 8 there is a block containing seven to 10 percent of total initial gas reserves for the entire field, and this block shows a very slow pressure drawdown. For example, formation pressure in Well 88, which is in the middle of the block, is 1.5 to 1.8 MPa higher than in the producing area of the nearest gas treatment facility, which is No. 8.

The lack of good gas-dynamic communication between this block and the area where wells served by Gas Treatment Facility No. 8 are located may restrict gas flow and reduce gas production.

In order to extend the time frame over which production at Medvezhe field can be held steady at the present level, further drilling and additional surface facilities will be needed in the block (see drawing) as described below.

In the area of drilling, observation wells 143, 144, 145, 146, 147 and 148 will be drilled this year to determine the geological structure of this part of the reservoir. These wells will be drilled to gas/water contact and will be completed with 168-mm casing and 127-mm tubing. In 1986-1987, 18 production wells will be drilled in areas with the highest gas saturation. These wells will be clustered in threes. Individual wells in a cluster will be 70 to 100 m apart and the distance between well clusters will be 1.5 to 2 km. They will be drilled to about 15 m above gas/water contact and completed with 168-mm casing and 127-mm tubing also.

Surface construction will include two 426-mm connecting lines 13 to 14 km long from Gas Treatment Facility No. 8 to the center of the area where the additional wells will be drilled. Two 273-mm gathering lines two to three km long will be laid from each well cluster to the 426-mm connecting line, implementing a

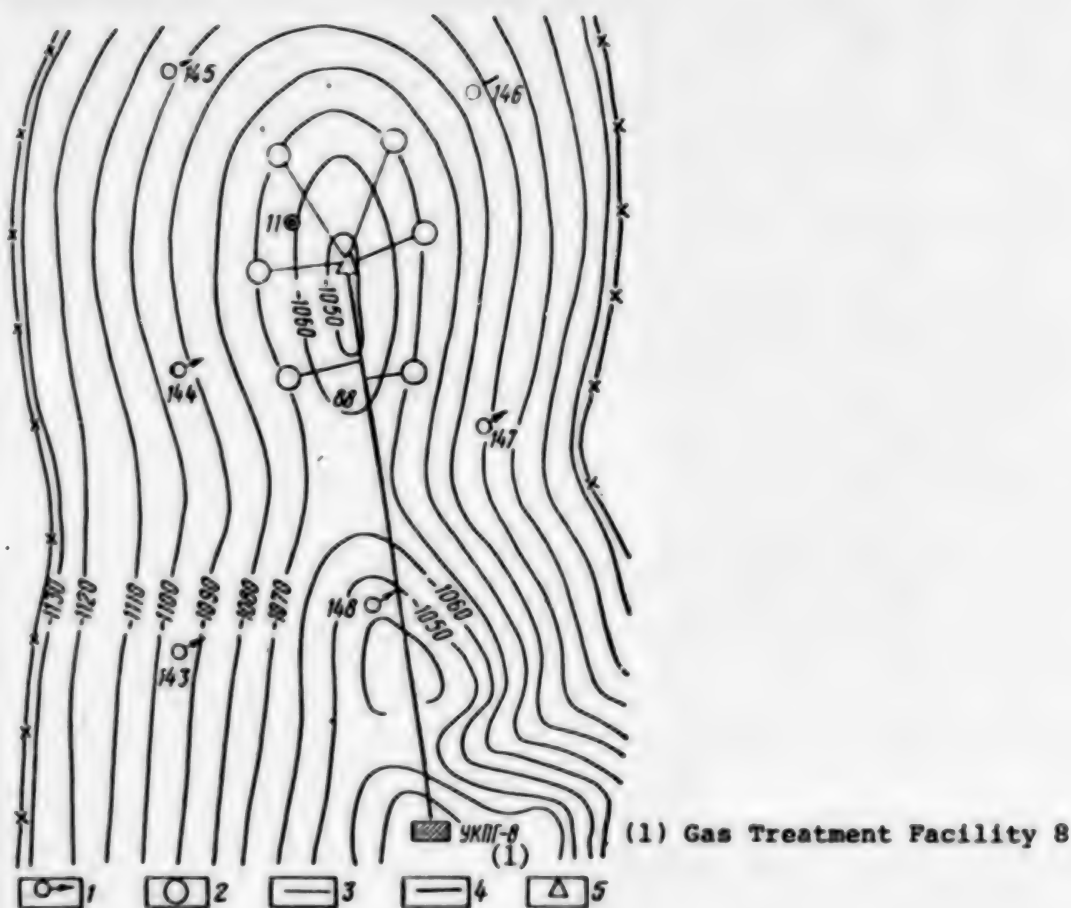
branch-line gas gathering system. At the point where the gathering lines join the 426-mm connecting line, equipment for injecting methanol from Gas Treatment Facility No. 8 will be provided.

Plans call for a 0.6- to 0.7-MPa pressure drop between the wellheads of the new wells and Gas Treatment Facility No. 8.

Formation pressure and temperature will be maintained in the 273-mm gathering lines and methanol will be injected into the 426-mm connecting line to prevent hydrate formation in the gas production system.

Equipment already in place at Gas Treatment Facility No. 8 and Compressor Station No. 8 will be able to treat and compress the gas, beginning in 1987-1988.

This plan could be widely applied in the region in the future, e.g., drill wells into small formations without building gas treatment facilities and lay gas gathering lines 20 to 30 km to existing gas treatment facilities at fields to the north.



#### New Wells and Surface Production Facilities Slated for Medvezhe Field

- |                               |                            |                                 |
|-------------------------------|----------------------------|---------------------------------|
| 1. Exploration Wells.         | 3. 273-mm Gathering Lines. | 5. Methanol Injection Facility. |
| 2. Exploration Well Clusters. | 4. 426-mm Connecting Line. |                                 |

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OIL AND GAS

NEW ESTIMATE OF ASTRAKHAN GAS POTENTIAL SOUGHT

Moscow GAZOVAYA PROMYSHLENNOST in Russian No 7, Jul 85 p 13

[Text] Plans for the design and development of the Astrakhan gas and chemical complex require an immediate and accurate estimate not only of the gas reserves of the Astrakhan gas condensate field proper, but also of the oil and gas potential of the surrounding area. However, the object of exploration efforts is the carbonaceous commercial gas-bearing sediments of the subsalt Paleozoic era, which are deep and overlain by a complex thick structure of saliferous above-salt rock. This is one of the main factors in the relatively slow pace of analysis of these promising Paleozoic sediments, which in turn retards the formulation of an effective oil and gas exploration program in the southwestern part of the Caspian Basin.

The purpose of V.E. Zin'kovskiy's dissertation, "The Geological Structure and Gas Potential of the Southwestern Part of the Caspian Basin Based on Geophysical Data Sets," submitted to satisfy requirements for a doctorate in geology and mineralogy, is to describe more accurately the geological structure of the subsalt Paleozoic sedimentary formation with oil and gas potential in the southwestern part of the Caspian Basin, using the latest data and a combination of several geological and geophysical methods.

The dissertation presents new tectonic factors at the interface with the crystalline base and that of subsalt Paleozoic sediments in the southwestern part of the Caspian Basin, a schematic of the distribution of carbonaceous subsalt Paleozoic formations with gas potential throughout the entire area researched, establishes the prevailing northwest trend of the pre-Kungur Paleozoic structures of the Astrakhan anticline and solves regional and geological exploration tasks for the first time in the southwestern part of the Caspian Basin, based on a large body of geological and geophysical data.

Results of the author's research provides a solid basis for establishing priorities and targets for further exploration for oil and gas in the southwestern part of the Caspian Basin.

The dissertation may be read at the All-Union Scientific Gas Research Institute.

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OIL AND GAS

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LICENSING OF MINGAZPROM BUILDERS IMPLEMENTED

Moscow GAZOVAYA PROMYSHLENNOST in Russian No 7, Jul 85 p 15

[Article by Ye.V. Konstantinenko, Tyumengazorgtekhstroy: "Licensing of Construction Organizations of the Ministry of the Gas Industry"]

Efforts to improve licensing and widespread implementation in the practical activities of construction organizations and planning offices will promote improved overall economic performance of the sector as well as greater responsibility and involvement of licensees in achieving end results.

In accordance with the resolution, "Improving Planning and Increasing the Economic Impact on the Improvement of Production Efficiency and Quality," adopted by the Central Committee of the Communist Party of the Soviet Union and the USSR Council of Ministers, a licensing system has been adopted for all construction and assembly organizations in the country since 1980. The licensing of contracted operations in the Ministry of the Gas Industry (Mingazprom) has been delegated to the Tyumengazorgtekhstroy Trust of the Tyumengazprom All-Union Production Association.

The fact that a construction organization's capabilities are clearly described in a license gives the license great financial and legal importance. A license clarifies the nature of the relationship between the contractor and other interested parties, particularly customer organizations and planning offices and facilitates projections of the volume of construction and assembly work, start-up and completion dates, etc.

Thus, a construction organization's license can be a persuasive document for substantiating the practicability and intensiveness of a production program that is being planned for a trust.

Experience with licensing shows that not all managers of organizations understand the need for and importance of this effort. They consider the license a formality and virtually ignore it in managing construction operations.

In processing licenses for Mingazprom's contractors, we take 35 basic annual production and economic parameters into account, chart the growth patterns of these indicators vs. the plan and the preceding year by central board, association and the ministry as a whole. Since 1983, in addition to license reviews, we also compile the organizations' planned and actual production growth figures and analyze why plans are not met.

Systematized data recorded on the license by fiscal year are valuable sources of information for the analysis of trends in an organization and for forecasting basic technical and economic indicators. This rich source of information must be fully utilized for further improvement of construction planning and management. This effort should be assigned to the All-Union Scientific Research Institute for Gas Industry Economics.

A series of unresolved problems in the licensing of the ministry's construction organizations complicates this effort, particularly the lack of standards for developing basic construction machinery and units, evaluating machine wear when estimating production capabilities, making allowances for the customer's equipment, etc. Such problems as reviewing the standard licensing forms, taking into account the peculiarities of operations of the ministry's organizations, demand immediate resolution by the the institute.

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OIL AND GAS

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COLD-WEATHER WORKING OF HIGH-VISCOSITY WELLS ANALYZED

Moscow NEFTYANOYE KHOZYAYSTVO in Russian No 3, Mar 85 pp 37-39

[Article by A. A. Dergachev and K. D. Dzhulamanov (Mangyshlakneft) and V. D. Lysenko, E. L. Leybin, V. F. Budnikov and D. O. Diyarov (KazNIPIneft [Kazakh Scientific-Research and Design Institute for the Oil Industry]): "Reduction in Number of Shut-In Wells in Mangyshlakneft"]

[Text] The operation of wells at Mangyshlakneft [Mangyshlak Oil-Production Association] fields is complicated by the anomalous properties of the crudes, which contain about 20 percent paraffin and congeal at high temperatures (30-34 degrees C). Based upon a generalization of field experience in this region, the mutual relationship between well-operating stability, well productivity and length of the delivery lines has been revealed. Thus, high-flow wells that are equipped with short delivery lines operate more reliably. Where delivery-line length  $l = 600-1,000$  meters, the operating routine for low flow-rate wells in the fall and winter is very unstable. Even short shutoff of the wells leads to oil congealing in the pipelines and, consequently, to a cessation of operations.

However, the wells at the association's main fields were built up by the traditional method, without taking into account the rheological peculiarities of high-paraffin crudes, since the industry at that time had no experience in recovering crudes with high congealment temperatures. At the Zhetybay field the wells were built with delivery lines that varied in length from 100 to 1,500 meters. Out of an operating inventory of 576 wells, 300 were built with delivery lines of  $300 < l < 1,500$  meters.

Special studies have established that where the product temperature is 20 degrees C at the well mouth the oil in the pipelines loses fluidity and well operation becomes impossible. The table shows the average monthly, maximum and minimal values of air temperatures according to the data of the Shevchenko weather station. It is evident from the table that the lowest air temperatures are recorded in January-March and November-December. At the same time, the soil freezes at an air temperature of -20 degrees C at the depth at which the pipe has been laid. It is during these months that the operation of low flow-rate wells which have a well-mouth product temperature of about 20 degrees C is complicated. Wells with a flow rate of less than 10 tons/day at the Zhetybay field constitute more than 60 percent of the operating inventory.



Thus, when there is a considerable temperature reduction in the fall-winter season, many wells are shut in for lengthy periods of time. Ordinary measures that are taken to improve the operation of this category of wells, which involve great material and labor expenditures, prove to be poorly efficient. This is the basic cause for the reduction in the volume of these labor-intensive operations, and, consequently, for the increase in the shut-in well inventory.

An analysis of the status of shut-in wells showed the following. Fewer than 5,000 tons of crude were taken from 56 wells (45 percent of the inventory), fewer than 10,000 tons from 70 wells (56 percent of the inventory) and no more than 20,000 tons from 80 wells (70 percent of the inventory). About 70 percent of the wells operated no more than 6 years before cessation of operations. Most of the wells were shut in during the cold season.

The data cited testifies to the exceptional importance of the problem of correctly building wells that work deposits with high-paraffin crudes. KazNIPIneft has made studies in this area, based upon experiments at the Uzen field.

Temperatures were measured during the experiment at the well mouths and the grouped gathering installation to which the wells were connected; with and without heating of the product at the well mouths; and within delivery pipelines with perlite-bituminous heat insulation. The operation of delivery lines without thermal insulation (the pipelines were 108 mm in diameter and were laid 0.8 meter deep) were studied at the same time.

The following was established as a result of the research performed.

1. In the summer the temperature of the crude at the grouped installation differed insignificantly from that at the well mouths and did not drop below 15-20 degrees C. In the winter the product's temperature at low flow-rate wells approximated the soil temperature (0-5 degrees C).
2. Wells with a flow rate of fewer than 10 tons/day could not be operated where the soil temperature was 0-5 degrees C and the delivery line was more than 250 meters long because of large-scale separation of the paraffin in the oil pipeline.
3. The well mouth must be heated if wells with a flow rate of fewer than 30 tons/day are to operate. However, without thermal insulation of pipes, this solution is unreliable, since, during well disconnections, the oil thickens in the pipelines. After this, in order to resume operation of the wells, labor-intensive work that involves special equipment must be done.

The area of application of the various types of systems for on-site gathering of the crude has been defined. For Zhetybay field wells, where the flow rate is fewer than 20-25 tons/day (84 percent of the inventory) it is

| Month      | Temperature, °C |         |         |
|------------|-----------------|---------|---------|
|            | Average         | Minimum | Maximum |
| January... | -3              | -25     | 14      |
| February.. | -2.1            | -29     | 19      |
| March..... | 2.9             | -20     | 24      |
| April..... | 9.6             | -6      | 32      |
| May.....   | 16.6            | 0       | 40      |
| June.....  | 20.6            | 2       | 41      |
| July.....  | 23.1            | 9       | 43      |
| August.... | 22.7            | 8       | 42      |
| September. | 18.4            | -1      | 37      |
| October... | 11.4            | -10     | 32      |
| November.. | 4.9             | -15     | 21      |
| December.. | -0.3            | -23     | 14      |

desirable to use well-mouth heating plus insulation as the basic method for well-building. For wells with a flow rate of fewer than 10 tons/day, the length of the delivery lines should not exceed 200-250 meters, for wells with a flow rate of 10-20 tons/day,  $l \leq 400$  meters. Where  $l < 250$ , well-mouth heating alone is sufficient. For wells with flow rates of 30-40 tons/day, depending upon the length of the delivery line, heating plus insulation ( $l < 600$  meters) or well-mouth heating alone ( $l < 400$  meters) should be used.

Implementation of the cited solutions for building wells requires labor-intensive, costly but extremely necessary technology, which will be economically justified by the result. The association has developed a corresponding operating program that is based on the near term. This principle was reflected in a new design for developing the Zhetybay field. It can be simplified by using clustered slant drilling. In this case, the well mouths should be grouped at a distance of no more than 100-120 meters from the gathering point for the wells. With clustered slant drilling, the buildup of new wells can be simplified and limited to well-mouth heating. This system has been used for wells of the most diverse productivity, including wells with flow rates of 5-10 tons/day. In this case, wells with flow rates of about 25-30 tons/day or more can be built by the traditional method without well-mouth heating.

As a result of the high technical feasibility, it is desirable to implement this system for gathering well product in combination with cluster drilling at all new fields with high paraffin content. At old fields, in order to provide for steady operation of wells with low flow rates, the systems for gathering and transporting the oil in the field should be rebuilt in accordance with the recommendations set forth.

#### Conclusions

1. High paraffin content in crudes causes congealment at high above-zero temperatures (32-34 degrees C). Therefore, in the fall-winter period, the product of low flow-rate wells loses fluidity and congeals in the delivery lines, this occurring more intensely where  $l \gg 300$  meters.
2. In order to provide for reliable operation of low flow-rate wells, the systems for gathering and transporting the product on-site should be rebuilt with a view to reducing length of the delivery lines and to insulating them thermally. It is desirable that new wells be drilled by the clustered slant method, which enables the wells to be located closer to the product-gathering points.

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## OIL AND GAS

## TYUMEN OBLAST BULK PLANTS INCORRECTLY SUBORDINATED

Moscow NEFTYANIK in Russian No 2, Feb 85 pp 28-29

[Interview with Vladimir Akimovich Akimov, chief of the Tyumen Regional Administration of RSFSR Goskomnefteprodukt [State Committee for Petroleum Product Supply]: "An Oil Region Needs Petroleum Product"]

[Text] Tyumen Oblast is the country's main oil and gas base for meeting the economy's demand for fuel and hydrocarbon raw material. Moreover, a wood-processing industry, agriculture and other branches of the economy have been developed in the area.

How has the petroleum-product supply of a complicated multiple-industry economy been organized over the vast expanse of West Siberia? What kinds of problems are the people who are responsible for such an important matter solving? The editorial board got in touch with the Tyumen Regional Administration of RSFSR Goskomnefteprodukt and set up an interview with administration chief V. A. Akimov.

[Question] Vladimir Akimovich, your administration is unusual in the Russian Federation's petroleum-supply system, both because of its northern geographic location and the scale of operations connected with developing the West Siberian Oil and Gas Complex. This, obviously, puts its stamp on the nature of the activity of bulk-plant collectives and on the problems that face them?

[Answer] In fact, the region's large territory, its high latitude, the severe climate, permafrost over substantial areas and the swampy location impose severe conditions for organizing the supply of petroleum product for the area. A special hindrance is poor development of the infrastructure, primarily transport and communications. This is completely explicable: two decades ago the main part of the oblast--its northern region--had practically no economic development, it was waiting for its hour to shine. And now its time has come, and with it, its problems--social, demographic and economic, including also the matter of petroleum supply--have also appeared in full magnitude.

[Question] Could you tell us briefly about your administration's structure?

[Answer] Our administration supplies the whole oblast's economy, including organizations of geologists, pipeline builders and oil and gas well operators,

with petroleum product. For this purpose there are 23 bulk plants and 14 branches of them and 53 fixed, 22 mobile and 2 floating AZS's [filling stations]. We fill the oilfield workers' orders, in accordance with the funds allocated, through the Surgut, Tyumen, Khanty-Mansiysk, Sovet and certain other bulk plants.

The pronounced zonal petroleum-supply system is traced clearly. Thus, the southern portion of the oblast is basically an agricultural zone--the food-stuffs base of Tyumen's industrial Ob region. It is supplied through bulk plants and AZS's, and the nature of the work differs little from that of similar enterprises of other administrations in Russia, with its inherent seasonality. The oblast's central zone is basically one of oilfield activity and, partially, lumber enterprises. Seasonality is completely absent here, and the year-round supplying of oil is marked by precise steadiness. Finally, in the northern zone are gas fields and geological-exploration organizations. The main bulk of the fuel here is imported only during the summer navigation season, over the Irtysh and Ob Rivers, the Ob Gulf, and the Nadym, Urengoy and Taz Rivers. The main support points here are the Salekhard bulk plant and, partially, the Khanty-Mansiysk and Surgut plants.

[Question] What distinguishes the work of your northern bulk plants from those located in the southern part of the oblast or in Russia's central belt?

[Answer] The fact that they operate under difficult climatic conditions, and they were built at times on permafrost, with all the complications that ensue from that. During the navigation season, during the brief summer here, work boils around the clock, and it is good that illumination is not required: the night is bright. Ships with petroleum product come endlessly, they must unload, and then small shallow-draft tankers and barges deliver it directly to the consumers from the Khanty-Mansiysk and Salekhard bulk plants. In the winter the collectives of these two large transshipping bulk plants provide petroleum product only for the cities of Khanty-Mansiysk and Salekhard. At this time, preventive maintenance is performed on the equipment, which quickly becomes worn under the difficult conditions of arctic operation. During the cold season we supply workers, engineers and technicians with short sheepskin coats, felt boots and special heated clothing. A peculiarity of the Khanty-Mansiysk bulk plant is the Irtysh's low shore, which is subject to flooding and destruction. Each year the river takes away 5-6 meters of dry land. During spring flooding the header pipes must be moved. A design for protecting the shore is being readied.

[Question] Are new bulk plants which completely meet modern petroleum-supply requirements being built?

[Answer] We are completing construction of the Yarkovo bulk plant at a budget-estimated cost of about 1.8 million rubles. A feature of it is that it is of the outfitted-module type. It is the first bulk plant in our country where all the newest equipment--the boiler house, pump station, garage and operations module--is installed directly at the factory site. The work is being done by Sibkomplektmontazh [Siberian Association for the Installation of Outfitted Modules]. While previously the construction of a bulk plant was stretched out over several years, this has been cut short now: a year of outfitting the modules at the plant, and another year of installing them by means of lifting cranes based on specially prepared ground. The developers are the



SKB [Special Design Bureau] of Transnefteavtomatika and the Omsk Institute Sibgiproneftetrans [Siberian State Scientific-Research and Design Institute for Oil Pipeline Transport]. The Yarkovo bulk plant is being built to replace the obsolete, poorly equipped Eyevelevo plant, whose ground is being eroded by the Tobol River.

The complete rebuilding of the most northerly bulk plant--the Tazovskaya--has been started. The tanks here were small, but they also malfunctioned, since the wooden foundations, which were placed on permafrost, had rotted through. The design for rebuilding the Tazovskaya bulk plant has been worked out on a modern technical basis, taking the soil and climatic conditions into account. Some of the tanks have already been erected and put into operation.

[Question] Your bulk plants are meeting the oilfield workers' requirements?

[Answer] Only by half. They get the remaining petroleum product from their own agency bulk plants and storage facilities. But these plants, unfortunately, were built without taking account of recent achievements in equipment and technology and in the operation of a bulk-plant facility, causing losses of petroleum product and increase in the dependent distribution costs.

I consider the current trend toward supplying petroleum product through a network of agency bulk plants, and even more so an expansion thereof, to be incorrect and economically inadvisable and unsuitable.

[Question] How do you explain the striving of organizations, including oil-recovery organizations, to have bulk plants or petroleum storage that are maybe lousy, but their own?

[Answer] Primarily excessive misgivings: you don't know what's going to happen! Let us give up, they say, our bulk plants to RSFSR Goskomnefteprodukt, and then you have to shake these petroleum products out from it. But right now everything is ours, there is someone to demand it from....Possibly I am exaggerating this question. But one way or another, the existing practice of providing petroleum products for the oil-bearing regions does not meet state interests and requires much restructuring.

[Question] Are you acquainted with the operating situation of the bulk-plant activity of this region, and how does it appear to you?

[Answer] A survey of agency bulk plants in the cities of Nefteyugansk, Nizhnevartovsk, Megion and Uray was made with a view to the administration's centralizing petroleum-product supply for the oblast's northern regions, jointly with Glavtyumenneftegaz [Main Administration for the Oil and Gas Industry of Tyumen Oblast]. The results of the check confirmed the original misgivings. It was found that none of the bases comply with the construction norms and regulations and the regulations on operation and fire safety. But our administration is, in practice, unable to initiate anything to improve the state of affairs at these enterprises.

The filling stations at Nizhnevartovsk are in an unsatisfactory state. They urgently require rebuilding, to include replacement of the tanks, gasoline pumps and the technology for issuing petroleum product, and the construction of access routes.

The bulk plant at Nefteyugansk has important deficiencies. Until now the construction of a berth here still has not been finished, the shore has not been stabilized, the interlocking and process pipelines require replacement, and the tank farm for oil requires complete rebuilding. The bulk plant at Nadym has no purification structures, automated fire-extinguishing system, and so on.

[Question] Vladimir Akimovich, is your administration ready to take the agencies' bulk plants onto its own books and, in particular, those now subordinate to Glavtyumenneftegaz? If you are ready, how do you contemplate implementing this?

[Answer] We are ready to take them at any time. Agency bulk plants should be transferred in accordance with the existing procedure for transferring enterprises, associations, organizations, institutions, and buildings and structures. Where there is a disparity or actual understating of work plans and limiting appropriations for maintenance of the administration's staff, the AUP [administrative and managerial personnel] staffs and production personnel, the latter will be transferred in accordance with existing standards, statutes and requirements of RSFSR Goskomnefteprodukt. In order to centralize the delivery of petroleum product to the AZS's and to the customers from the bulk plants that are taken over, the allocation of additional gasoline tank trucks to the Tyumen motor-transport administration should be called for.

[Question] What will you want from the current possessors of the bulk plants whose transfer is contemplated?

[Answer] Just one thing: take measures without delay to eliminate existing deficiencies, for these bulk plants will serve them with true faith and justice.

[Question] With the receipt of these bulk plants, the problem of supplying the oblast centrally with petroleum product will be completely solved?

[Answer] No. There are in the Ob's northern regions more than 100 large, medium and small storages for combustibles and lubricants of various ministries and agencies, which have substantial total tank capacity that amounts to hundreds of thousands of cubic meters. The administration is now doing work on refining the technical condition and suitability of them for purposes of picking them up on the books of the RSFSR Goskomnefteprodukt system.

In order to supply the oblast steadily with petroleum product, above all the construction of a large Urengoy water-and-rail bulk plant at the Tikhaya Railroad Yard, with a branch in the city of Urengoy, is required. The design task for it has already been formulated. Omsk's Sibgiproneftetrans is completing the development of a refined system for supplying the oblast with petroleum over the long term, 1990-2000.

[Question] It is known that delivering fuel to remote regions is expensive, sometimes exceeding the cost of the petroleum product itself. However, in your oblast the petroleum produce can be replaced by gas condensate after an uncomplicated refining of it in special installations. What can you say in this regard?

Actually we do have this capability, and it is strengthened by the positive results of lengthy work by several industrial-test installations. As the tests indicated, the replacement for petroleum product does not cause premature engine wear, the exhaust gases pollute the atmosphere less, and it is cheaper by far. But the practical solution of this important economic problem has been prolonged excessively. USSR Goskomnefteprodukt is maintaining that it is necessary to construct two lines of the condensate-processing plant in Surgut, based upon the requirements of Tyumen Oblast's northern regions for petroleum products. Its technology was developed by the Omsk Branch of VNIPineft [All-Union Scientific-Research and Design Institute for the Oil-Refining and Petrochemical Industries].

Introduction of the condensate-refining plant in the city of Surgut will bring production of the replacement for petroleum product by an inexpensive local raw material close to the regions where it is consumed. The economic desirability of such an important matter is indisputable. This, incidentally, will not require great capital expense for additional expansion of the Surgut bulk-plant tank farm.

The Kurgan-Tyumen petroleum-product pipeline that Volgograd's Giproneftetrans [Scientific-Research and Design Institute for Oil Pipelines] has designed will serve to bring petroleum-product resources closer to the place of consumption. It is planned to build a tanker-truck filling point at the pipeline's terminal point and to transfer the Tyumen bulk plant, which is now located amidst densely populated tracts and industrial enterprises of the oblast's center, to its site.

During the 12th Five-Year Plan we should go to work full swing in rebuilding the bulk-plant activity and in performing new construction. It is necessary to raise the organization and technical equipping of Tyumen Oblast's petroleum supply to a qualitatively new level, which will correspond with the pace of our region's development.

[Question] Now a few words about the administration's work indicators.

[Answer] It must be said that the majority of them have been above plan during all years of the 11th Five-Year Plan, especially in the first half of 1984. In order to prove this, I shall cite a few figures. Each year we have cut planned dependent distribution costs by 2.5-3 percent, increased above-plan profit by 3-4 percent, and brought output per worker to 104-105 percent of the plan.

In the first half of last year the plan for delivering petroleum product was fulfilled 100.6 percent, and distribution costs were 5.1 percent below the plan. The year's commitments--to provide 100-percent delivery of petroleum product, to reduce distribution costs by 1 percent, and to obtain 200,000 rubles of above-plan profit--have been basically fulfilled.

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11409

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## OIL AND GAS

### POWER TEXTBOOK REVIEWED

Moscow GAZOVAYA PROMYSHLENNOST in Russian No 7, Jul 85 p 35

[Book review by A.F. Shkuta, director, Mingazprom Main Power Administration]

[Text] The "Nedra" publishing house has just released "Electrification of Oil and Gas Enterprises" by V.G. Men'shov and I.I. Sud. On a high scientific level, the book presents a number of practical and theoretical aspects of power and electrification of enterprises in the oil and gas industry. Readers may familiarize themselves with state-of-the-art power supplies and electrical equipment for drilling rigs, well pumping equipment, field facilities, pipeline compressor stations and booster stations.

This book represents the first thorough treatment of the economic aspects of engineering decision-making and will greatly contribute to the economic education of future electrical engineers.

The trend in electrical equipment for the oil and gas industry in the future is toward the generalized use of semiconductor transformers, computers and microprocessors.

The book pays special attention to the economics of fuel and energy resources. The authors discuss not only general electric power economics, but also specific matters concerning power supply to downhole drill-bit motors, pump-well production and oil pipeline pumping operations. The reader thus gains a clear grasp of the energy consumption levels of these technological processes, factors affecting electrical consumption and ways to reduce energy consumption. Information on the operational reliability of electrical equipment, power services management, electrical equipment maintenance systems, the sequence for placing electrical facilities on stream and safety rules for servicing electrical facilities will be of assistance to young specialists working independently.

This book will not only be useful to students at institutions of higher education, but also to a wide cross-section of power specialists.

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CSO: 1822/315



OIL AND GAS

AZSSR OIL AND GAS DRILLING FIGURES FOR JANUARY 1985

Baku VYSHKA in Russian 10 Feb 85 p 1

[Oil and Gas Drilling Reports under the rubric "Oil and Gas: How Drilling Is Progressing"]

AzSSR TsSU [Central Statistical Administration] DATA ON FULFILLMENT OF THE  
DRILLING PLAN FOR JANUARY 1985.

( % toward plan)

|  | total<br>footage | including<br>exploratory |
|--|------------------|--------------------------|
| <b>AZNEFT ASSOCIATION</b>  |                  |                          |
| (A. A. Dzhaferov, general director)  | 108.2            | 105.2                    |
| <b>Apsheronsk UBR [Drilling Operations Administration]</b>   |                  |                          |
| (A. Khasmamedov, M. Mamedov)   | 111.4            | ---                      |
| <b>Siazan UBR (A. Gadzhiyev and I Guvvetov)</b>  | 100.4            | 100.8                    |
| <b>Ali-Bayramly UBR (N. Alekperov and N. Ismaylov)</b>   | 117.5            | 207.0                    |
| <b>Prikurinskiy UBR (A. Abdulayev, acting director)</b>  | 100.9            | 25.5                     |
| <b>Kyursanginskiy URB [Exploratory Drilling Administration]</b>  |                  |                          |
| (A. Bakhshiyev and Sh. Abilov)   | 101.5            | 110.7                    |
| <b>Dzheybranchelskiy URB (Yu. Mekhtiyev, acting director)</b>  | 103.0            | 103.0                    |
| <b>Dzharlinskiy URB (R. Beliyev and M. Dzhaferov)</b>  | 100.3            | 107.1                    |
| <b>KASPMORNEFTEGAZPROM [Caspian Sea Offshore Oil and Gas Industry] VPO [All-Union Production Association],</b> |                  |                          |
| (K. A. Abasov, chief)  | 98.3             | 84.2                     |
| <b>Neftyanyye Kamni MUBR [Offshore Drilling Operations Administration] (O. Abasov and K. Dadashev)</b>         | 104.4            | 104.3                    |
| <b>Peschaninskiy MUBR (Sh Mekhtiyev and B. Mamedov)</b>  | 105.9            | ---                      |
| <b>Sangachaly MUBR (F. Dzhalilov and V. Gadzhiyev)</b>   | 105.9            | ---                      |
| <b>Primorskiy MURB [Offshore Exploratory Drilling Administration] (A. Ismaylov and E. Imanov)</b>              | 101.1            | 127.5                    |
| <b>Bulla MURB (M. Mamedov and A. Ponyayev)</b>   | 23.2             | 23.2                     |
| <b>Bukhta Iliche MURB (A. Gasanov and I. Guseynov)</b>   | 181.3            | 197.1                    |
| <b>MURB with STS (not further identified) (Ch. Safarov and A. Muradverdiyev)</b>                               | 104.5            | 104.5                    |
| <b>Total for associations</b>  | 103.6            | 93.0                     |

OIL AND GAS

AZSSR OIL AND GAS DRILLING FIGURES FOR JANUARY-FEBRUARY 1985

Baku VYSHKA in Russian 12 Mar 85 p 4

[Oil and Gas Drilling Reports under the rubric "Oil and Gas: How Drilling Is Progressing"]

AzSSR TsSU [Central Statistical Administration] DATA ON FULFILLMENT OF DRILLING PLAN FOR JANUARY-FEBRUARY 1985 FOR THE AZNEFT ASSOCIATION AND THE KASPMORNEFTEGAZPROM (Caspian Sea Offshore Oil and Gas Industry) VPO (All-Union Production Association)]

|   | (percent toward plan) |             |                      |             |
|---|-----------------------|-------------|----------------------|-------------|
|   | FEBRUARY              |             | JANUARY AND FEBRUARY |             |
|   | total                 | including   | total                | including   |
|   | footage               | exploratory | footage              | exploratory |
| AZNEFT ASSOCIATION  | 101.5                 | 85.3        | 104.9                | 95.1        |
| Apsheronskiy UBR [Drilling Operations Administration] (A. Khasmamedov and M. Mamedov)           | 122.5                 | ---         | 116.7                | ---         |
| Siazan UBR (A. Gadzhiyev and I. Guvvetov)   | 103.9                 | 100.8       | 102.3                | 100.8       |
| Ali-Bayramly UBR (N. Alekperov and N. Ismaylov)   | 101.5                 | 100.0       | 109.5                | 153.5       |
| Prikurinskiy UBR (A. Abasov, acting director)   | 100.5                 | ---         | 100.7                | 9.3         |
| Kyursanginskiy UBR (A. Bakhshiyev and Sh. Abilov)   | 100.1                 | 113.6       | 100.8                | 112.2       |
| Dzheyranchelskiy URB [Exploratory Drilling Administration] (Yu. Mexhtiyev, acting director)     | 71.1                  | 71.1        | 86.3                 | 86.3        |
| Dzharlinskiy URB (R. Veliyev and M. Dzafarov)   | 100.3                 | 107.8       | 100.3                | 107.5       |
| KASPMORNEFTEGAZPROM VPO   | 81.8                  | 53.1        | 89.8                 | 66.1        |
| Neftyanyye Kamni MUBR [Offshore Drilling Operations Administration] (O. Abasov and K. Dadashev) | 100.3                 | 137.0       | 102.4                | 116.2       |
| Peschaninskiy MUBR (Sh. Mekhtiyev and B. Mamedov)   | 108.1                 | ---         | 107.0                | ---         |

|  | (percent toward plan) |             |                      |             |
|--|-----------------------|-------------|----------------------|-------------|
|  | FEBRUARY              |             | JANUARY AND FEBRUARY |             |
|  | total                 | including   | total                | including   |
|  | footage               | exploratory | footage              | exploratory |
| Sangachaly MURB  | 100.1                 | ---         | 103.3                | ---         |
| Primorskiy MURB [Offshore Exploratory<br>Drilling Administration] (A. Ismaylov<br>and E. Imanov) | 100.2                 | 94.8        | 100.7                | 110.7       |
| Bulla MURB (M. Mamedov and A. Ponyayev)  | 45.9                  | 45.9        | 34.3                 | 34.3        |
| Bukhta Iliche MURB (A. Gasymov and I.<br>Guseynov)   | 101.1                 | 65.8        | 135.7                | 117.1       |
| MURB with STS (not further identified)<br>(Ch. Safarov and A. Muradverdiyev)                     | 102.5                 | 102.5       | 103.4                | 103.4       |
| Total for associations   | 92.1                  | 64.4        | 97.8                 | 77.1        |

12659

CSO: 1822/283

OIL AND GAS

AZSSR OIL AND GAS DRILLING FIGURES FOR JANUARY-MARCH 1985

Baku VYSHKA in Russian 9 Apr 85 p 1

[Oil and Gas Drilling Reports under the rubric "Oil and Gas: How Drilling Is Progressing"]

AzSSR TsSU [Central Statistical Administration] DATA ON FULFILLMENT OF DRILLING PLAN FOR JANUARY-MARCH 1985 FOR THE AZNEFT ASSOCIATION AND THE KASPMORNEFTEGAZPROM (Caspian Sea Offshore Oil and Gas Industry) VPO (All-Union Production Association)]

|   | (percent toward plan) |             |               |             |
|---|-----------------------|-------------|---------------|-------------|
|   | MARCH                 |             | JANUARY-MARCH |             |
|   | total                 | including   | total         | including   |
|   | footage               | exploratory | footage       | exploratory |
| AZNEFT ASSOCIATION  | 104.7                 | 108.3       | 104.8         | 100.1       |
| Apsheronskiy UBR [Drilling Operations Administration] (A. Khasmamedov and M. Mamedov)           | 106.5                 | ---         | 113.1         | ---         |
| Siazan UBR (A. Gadzhiyev and I. Guvvetov)   | 100.7                 | 6.0         | 101.6         | 53.4        |
| Ali-Bayramly UBR (N. Alekperov and N. Ismaylov)   | 101.7                 | 396.0       | 106.8         | 234.3       |
| Prikurinskiy UBR (A. Abasov, acting director)   | 100.4                 | ---         | 100.6         | 3.9         |
| Kyursanginskiy UBR (A. Bakhshiyev and Sh. Nazirov)  | 102.8                 | 164.3       | 101.5         | 128.3       |
| Dzheyranchelskiy URB [Exploratory Drilling Administration] (Yu. Mekhtiyev, acting director)     | 129.9                 | 129.9       | 102.0         | 102.0       |
| Dzharlinskiy URB (R. Veliyev and M. Dzhaifarov)   | 100.2                 | 100.2       | 100.2         | 104.8       |
| KASPMORNEFTEGAZPROM VPO   | 58.1                  | 45.9        | 78.2          | 58.1        |
| Neftyanyye Kamni MUBR [Offshore Drilling Operations Administration] (O. Abasov and K. Dadashev) | 100.1                 | 202.0       | 101.6         | 143.0       |
| Peschaninskiy MUBR (Sh. Mekhtiyev and B. Mamedov)   | 68.9                  | ---         | 94.0          | ---         |
| Sangachaly MUBR (F. Dzhalilov and B. Gadzhiyev)   | 46.8                  | ---         | 83.0          | ---         |



|   | (percent toward plan) |             |               |             |
|---|-----------------------|-------------|---------------|-------------|
|   | MARCH                 |             | JANUARY-MARCH |             |
|   | total                 | including   | total         | including   |
|   | footage               | exploratory | footage       | exploratory |
| Primorskiy MURB (A. Ismaylov and E. Imanov)                                 | 43.5                  | 66.5        | 76.1          | 93.0        |
| Bulla MURB (M. Mamedov and V. Akhmedov)                                     | 41.8                  | 41.8        | 37.1          | 37.1        |
| Bukhta Iliche MURB (A. Gasymov and I. Guseynov)                             | 111.2                 | 102.3       | 127.7         | 111.6       |
| MURB with STS (not further identified)<br>(Ch. Safarov and A Muradverdiyev) | 47.0                  | 47.0        | 82.4          | 82.4        |
| Total for associations:   | 82.9                  | 68.5        | 92.3          | 73.8        |

12659  
CSO: 1822/283

OIL AND GAS

AZSSR OIL AND GAS DRILLING FIGURES FOR JANUARY-APRIL 1985

Baku VYSHKA in Russian 12 May 85 p 1

[Oil and Gas Drilling Reports under the rubric "Oil and Gas: How Drilling Is Progressing"]

AzSSR TsSU [Central Statistical Administration] DATA ON FULFILLMENT OF THE DRILLING PLAN FOR JANUARY-APRIL 1985 FOR THE AZNEFT ASSOCIATION AND THE KASPMORNEFTEGAZPROM [Caspian Sea Offshore Oil and Gas Industry] VPO [All-Union Production Association]

|   | (percent toward plan)       |                          |                                   |                          |
|---|-----------------------------|--------------------------|-----------------------------------|--------------------------|
|   | JANUARY<br>total<br>footage | including<br>exploratory | JANUARY-APRIL<br>total<br>footage | including<br>exploratory |
| AZNEFT ASSOCIATION  | 102.7                       | 92.4                     | 104.2                             | 97.9                     |
| Apsheronskiy UBR [Drilling Operations Administration] (A. Khasmamedov and M. Mamedov)           | 110.1                       | ---                      | 112.3                             | ---                      |
| Siazan UBR (A. Gadzhiyev and I. Guvvetov)   | 100.1                       | 20.0                     | 101.1                             | 39.7                     |
| Ali-Bayramly UBR (N. Alekperov and N. Ismaylov)   | 117.9                       | ---                      | 109.6                             | 319.0                    |
| Prikurinskiy UBR (A. Abasov, acting director)   | 100.1                       | ---                      | 100.4                             | 2.7                      |
| Kyursanginskiy UBR (A. Bakhshiyev and A. Nazirov)   | 100.1                       | 100.5                    | 100.1                             | 121.0                    |
| Dzheyranchelskiy URB [Exploratory Drilling Administration] (Yu. Mekhtiyev, acting director)     | 101.9                       | 101.9                    | 101.9                             | 101.9                    |
| Dzharlinskiy URB (R. Veliyev and M. Dzafarov)   | 100.8                       | 100.8                    | 100.4                             | 103.7                    |
| KASPMORNEFTEGAZPROM VPO   | 82.1                        | 70.0                     | 79.2                              | 61.2                     |
| Neftyanyye Kamni MUBR [Offshore Drilling Operations Administration] (O. Abasov and K. Dadashev) | 100.2                       | 24.4                     | 101.3                             | 114.8                    |
| Peschaninskiy MUBR (Sh. Mekhtiyev and B. Mamedov)   | 56.6                        | ---                      | 84.3                              | ---                      |

|  | (percent toward plan) |             |               |             |
|--|-----------------------|-------------|---------------|-------------|
|  | MARCH                 |             | JANUARY-MARCH |             |
|  | total                 | including   | total         | including   |
|  | footage               | exploratory | footage       | exploratory |
| Sangachaly MUBR (F. Dzhalilov and B. Gadzhiyev)  | 58.1                  | ---         | 76.5          | ---         |
| Primorskiy MURB [Offshore Exploratory Drilling Administration] (A. Ismaylov and E. Imanov) | 100.7                 | 70.7        | 82.6          | 87.1        |
| Bulla MURB (M. Mamedov and V. Akhmedov)  | 101.0                 | 101.0       | 54.0          | 54.0        |
| Bukhta Iliche MURB (A. Gasymov and I. Guseynov)  | 151.9                 | 100.4       | 133.3         | 109.4       |
| MURB with STS (not further identified) (Ch. Safarov and A. Muradverdiyev)                  | 104.0                 | 104.0       | 88.1          | 88.1        |
| Total for associations:  | 93.4                  | 79.2        | 92.6          | 75.2        |

12659

CSO: 1822/283

OIL AND GAS

AZSSR OIL AND GAS DRILLING FIGURES FOR JANUARY-MAY 1985

Baku VYSHKA in Russian 8 Jun 85 p 2

[Oil and Gas Drilling Reports under the rubric "Oil and Gas: How Drilling Is Progressing"]

AzSSR TsSU [Central Statistical Administration] DATA ON FULFILLMENT OF THE DRILLING PLAN FOR JANUARY-MAY 1985 FOR THE AZNEFT ASSOCIATION AND THE KASPMORNEFTEGAZPROM [Caspian Sea Offshore Oil and Gas Industry] VPO [All-Union Production Association]

|   | (percent toward plan) |             |             |             |
|---|-----------------------|-------------|-------------|-------------|
|   | MAY                   |             | JANUARY-MAY |             |
|   | total                 | including   | total       | including   |
|   | footage               | exploratory | footage     | exploratory |
| AZNEFT ASSOCIATION  | 102.8                 | 107.5       | 103.9       | 100.1       |
| Apsheronskiy UBR [Drilling Operations Administration] (A. Khasmamedov and M. Mamedov)           | 111.9                 | ---         | 112.2       | ---         |
| Siazan UBR (A. Gadzhiyev and I. Guvvetov)   | 52.2                  | 42.9        | 89.5        | 40.6        |
| Ali-Bayramly UBR (N. Alekperov and N. Ismaylov)   | 129.6                 | 294.5       | 113.8       | 312.9       |
| Prikurinskiy UBR (acting director A. Abasov)  | 108.6                 | 139.1       | 102.2       | 34.4        |
| Kyursanginskiy UBR (Kh. Dashdamirov, acting director, and A. Nazirov)                           | 100.5                 | 149.5       | 101.0       | 126.9       |
| Dzheybranchelskiy UBR [Exploratory Drilling Administration] (Yu. Mekhtiyev)                     | 102.9                 | 102.9       | 102.2       | 102.2       |
| Dzharlinskiy UBR (R. Veliyev and M. Dzhaferov)  | 100.6                 | 100.6       | 100.4       | 102.9       |
| KASPMORNEFTEGAZPROM VPO   | 86.5                  | 50.4        | 80.7        | 58.9        |
| Neftyanyye Kamni MUBR [Offshore Drilling Operations Administration] (O. Abasov and K. Dadashev) | 100.1                 | ---         | 101.0       | 100.4       |
| Peschaninskiy MUBR (Sh. Mekhtiyev and B. Mamedov)   | 114.9                 | ---         | 90.7        | ---         |



|  | (percent toward plan) |             |             |             |
|--|-----------------------|-------------|-------------|-------------|
|  | MAY                   |             | JANUARY-MAY |             |
|  | total                 | including   | total       | including   |
|  | footage               | exploratory | footage     | exploratory |
| Sangachaly MUBR (acting director S. Magerramov, and B. Gadzhiyev)                          | 100.7                 | ---         | 81.5        | ---         |
| Primorskiy MURB [Offshore Exploratory Drilling Administration] (A. Ismaylov and E. Imanov) | 101.2                 | 101.5       | 86.5        | 90.1        |
| Bulla MURB (M. Mamedov and V. Akhmedov)  | 21.6                  | 21.6        | 47.2        | 47.2        |
| Bukhta Iliche MURB (A. Gasymov and I. Guseynov)  | 120.9                 | 58.9        | 130.9       | 101.1       |
| MURB with STS (not further identified) (Ch. Safarov and A. Muradverdiyev)                  | 63.9                  | 63.9        | 83.0        | 83.0        |
| Total for associations:  | 95.4                  | 74.8        | 93.2        | 75.1        |

12659

CSO: 1822/283

OIL AND GAS

AZSSR OIL AND GAS DRILLING FIGURES FOR JANUARY-JUNE 1985

Baku VYSHKA in Russian 9 Jul 85 p 1

[Oil and Gas Drilling Reports under the rubric "Oil and Gas: How Drilling Is Progressing"]

AzSSR TsSU [Central Statistical Administration] DATA ON FULFILLMENT OF THE DRILLING PLAN FOR JANUARY-JUNE 1985 FOR THE AZNEFT ASSOCIATION AND THE KASPMORNEFTEGAZPROM [Caspian Sea Offshore Oil and Gas Industry] VPO [All-Union Production Association]

|   | (percent toward plan) |             |              |             |
|---|-----------------------|-------------|--------------|-------------|
|   | JUNE                  |             | JANUARY-JUNE |             |
|   | total                 | including   | total        | including   |
|   | footage               | exploratory | footage      | exploratory |
| AZNEFT ASSOCIATION  | 105.5                 | 100.5       | 104.2        | 100.2       |
| Apsheronskiy UBR [Drilling Operations Administration] (A. Khasmamedov and M. Mamedov)           | 109.6                 | ---         | 111.7        | ---         |
| Siazan UBR (A. Gadzhiyev and I. Guvvetov)   | 52.6                  | 34.7        | 82.7         | 39.3        |
| Ali-Bayramly UBR (N. Alekperov and N. Ismaylov)   | 129.8                 | 136.3       | 116.5        | 254.0       |
| Prikurinskiy UBR (A. Abasov, acting director)   | 100.6                 | ---         | 101.9        | 26.8        |
| Kyursanginskiy UBR (acting director Kh. Dashdamirov, and A. Nazirov)                            | 101.1                 | 256.1       | 101.0        | 148.0       |
| Dzheybranchelskiy UBR [Exploratory Drilling Administration] (Yu. Mekhtiyev)                     | 100.7                 | 100.7       | 101.9        | 101.9       |
| Dzharlinskiy UBR (R. Veliyev and M. Dzhaifarov)   | 100.4                 | 100.4       | 100.4        | 102.4       |
| KASPMORNEFTEGAZPROM VPO   | 78.4                  | 53.0        | 80.4         | 58.0        |
| Neftyanyye Kamni MUBR [Offshore Drilling Operations Administration] (O. Abasov and K. Dadashev) | 100.2                 | ---         | 100.9        | 100.4       |
| Peschaninskiy MUBR (Sh. Mekhtiyev and B. Mamedov)   | 101.1                 | ---         | 92.5         | ---         |
| Sangachaly MUBR (S. Magerramov and B. Gadzhiyev)  | 72.1                  | ---         | 79.8         | ---         |

|   | (percent toward plan) |                          |                  |                          |
|---|-----------------------|--------------------------|------------------|--------------------------|
|   | JUNE                  |                          | JANUARY-JUNE     |                          |
|   | total<br>footage      | including<br>exploratory | total<br>footage | including<br>exploratory |
| Primorskiy MURB (A. Ismaylov and E. Imanov)     | 115.0                 | 52.9                     | 91.4             | 83.7                     |
| Bulla MURB (M. Mamedov and V. Akhmedov)         | 50.3                  | 31.9                     | 47.7             | 44.6                     |
| Bukhta Iliche MURB (A. Gasymov and I. Guseynov) | 56.4                  | 68.2                     | 119.4            | 97.1                     |
| MURB with STS (not further identified)          | 65.8                  | 65.8                     | 80.1             | 80.1                     |
| Total for associations:                         | 93.2                  | 74.1                     | 93.2             | 75.0                     |

12659

CSO: 1822/283

OIL AND GAS

AZSSR OIL AND GAS PRODUCTION FIGURES FOR JANUARY 1985

Baku VYSHKA in Russian 9 Feb 85 p 2

[Oil and Gas Production Reports under the rubric "Oil and Gas: How Production Is Progressing"]

AzSSR TsSU [Central Statistical Administration] FIGURES ON FULFILLMENT OF  
OIL AND GAS PRODUCTION PLANS FOR JANUARY 1985

|  | (in percentages toward plan) |                 |
|--|------------------------------|-----------------|
|  | JANUARY                      |                 |
|  | OIL<br>RECOVERY              | GAS<br>RECOVERY |
| AZNEFT ASSOCIATION   | 100.1                        | 104.4           |
| Leninneft NGDU [Petroleum and Gas Production Association] (Ya. Shirinov, acting chief, and E. Makhmudov, party organization secretary) | 100.0                        | 100.0           |
| NGDU imeni 26 Baku Commissars (A. Bagiyev and I. Mustafayev)   | 100.0                        | 105.9           |
| Ordzhonikidzeneft NGDU (Z. Tagiyev and R. Ragimov)   | 100.1                        | 106.1           |
| Karadagneft NGDU (K. Kerimov and Z. Abasov)  | 100.8                        | 103.8           |
| Kirovneft NGDU (T. Mamedov and I. Ibragimov)   | 100.1                        | 101.0           |
| Azizbekovneft NGDU (T. Gasanov and A. Bakhbanly)   | 100.0                        | 128.6           |
| Siazanneft NGDU (R. Mamedov and M. Bekdamirov)   | 100.0                        | 107.1           |
| Shirvanneft NGDU (V. Mamedov and Z. Geydarov)  | 100.1                        | 100.7           |
| Salyanyneft NGDU (F. Guseynov and G. Gasanov)  | 100.1                        | 103.4           |
| Neftechalaneft NGDU (S. Mamedov and I. Dzhaferov)  | 100.0                        | 110.0           |
| Muradkhanlyneft NGDU (S. Muradov and I. Babayev)   | 100.3                        | 100.0           |
| KASPMORNEFTEGAZPROM [Caspian Sea Offshore Oil and Gas Industry] VPO [All-Union Production Association]                                 | 100.0                        | 100.1           |
| PO [Production Association] imeni 22nd CPSU Congress (S. Ibragimov, director, I. Zaidov, party organization secretary)                 | 103.1                        | 161.4           |
| Artemneftegaz NGDU (B. Khalilov, chief, and T. Azizov)   | 104.8                        | 142.1           |
| NGDU imeni Serebrovskiy (F. Musayev and Gridnevskiy)   | 106.2                        | 103.4           |
| NGDU imeni N. Narimanov (G. Gumbatov and Z. Mamedov)   | 90.0                         | 92.9            |
| Bulla-more NGDU imeni 50-letiy SSSR (B. Mamedov and B. Mirzabekov)   | 102.2                        | 94.2            |
| Total for associations:  | 100.0                        | 100.3           |



OIL AND GAS

AZSSR OIL AND GAS PRODUCTION FIGURES FOR JANUARY-FEBRUARY 1985

Baku VYSHKA in Russian 10 Mar 85 p 1

[Oil and Gas Production Reports under the rubric "Oil and Gas: How Production Is Progressing"]

AzSSR TsSU [Central Statistical Administration] FIGURES ON FULFILLMENT OF  
OIL AND GAS PRODUCTION PLANS FOR JANUARY-FEBRUARY 1985

(in percentages toward plan)

|   | FEBRUARY<br>OIL<br>RECOVERY | GAS<br>RECOVERY | JANUARY-FEBRUARY<br>OIL<br>RECOVERY | GAS<br>RECOVERY |
|---|-----------------------------|-----------------|-------------------------------------|-----------------|
| AZNEFT ASSOCIATION  | 100.1                       | 103.2           | 100.1                               | 103.9           |
| Leninneft NGDU [Petroleum and Gas Production Association] (Ya. Shirinov, chief, E. Makhmudov, party organization secretary) | 100.0                       | 100.5           | 100.0                               | 100.3           |
| NGDU imeni 26 Baku Commissars (A. Bagiyev and Ch. Mustafayev)   | 100.1                       | 103.5           | 100.1                               | 104.8           |
| Ordzhonikidzeneft NGDU (Z. Tagiyev and R. Ragimov)  | 100.0                       | 109.2           | 100.1                               | 108.1           |
| Karadagneft NGDU (K. Kerimov and Z. Abasov)   | 100.9                       | 104.8           | 100.9                               | 104.3           |
| Kirovneft NGDU (T. Mamedov and I. Ibragimov)  | 100.1                       | 101.0           | 100.1                               | 101.0           |
| Azizbekovneft NGDU (T. Gasanov and A. Bakhbanly)  | 100.0                       | 129.0           | 100.0                               | 128.8           |
| Siazanneft NGDU (R. Mamedov and M. Bekdamirov)  | 100.0                       | 101.4           | 100.0                               | 104.4           |
| Shirvanneft NGDU (V. Mamedov and Z. Geydarov)   | 100.1                       | 100.1           | 100.1                               | 100.4           |
| Salyanyneft NGDU (F. Guseynov and G. Gasanov)   | 100.1                       | 100.4           | 100.1                               | 102.0           |
| Neftechalaneft NGDU (S. Mamedov and I. Dzhaifarov)  | 100.0                       | 111.1           | 100.0                               | 110.5           |
| Muradkhanlyneft NGDU (B. Orudzhev and I. Babayev)   | 100.8                       | 100.0           | 100.5                               | 100.0           |

(in percentages toward plan)

|  | FEBRUARY<br>OIL<br>RECOVERY | GAS<br>RECOVERY | JANUARY-FEBRUARY<br>OIL<br>RECOVERY | GAS<br>RECOVERY |
|--|-----------------------------|-----------------|-------------------------------------|-----------------|
| KASPMORNEFTEGAZPROM VPO  | 100.9                       | 101.9           | 100.4                               | 100.9           |
| PO [Production Association] imeni 22nd<br>CPSU Congress (S. Ibragimov, director,<br>N. Zaidov, party organization secretary) | 100.5                       | 100.0           | 101.9                               | 132.3           |
| Artemneftegaz NGDU (B. Khalilov, director;<br>T. Azizov)   | 100.0                       | 143.0           | 102.6                               | 142.5           |
| NGDU imeni Serebrovskiy (F. Musayev and<br>N. Gridnevskiy)   | 107.0                       | 107.6           | 106.6                               | 105.4           |
| NGDU imeni N. Narimanov (G. Gumbatov and<br>Z. Mamedov)  | 100.0                       | 100.9           | 94.7                                | 96.7            |
| Bulla-more NGDU imeni 50-letiyе SSSR (V.<br>Mamedov and B. Mirzabekov)   | 102.6                       | 91.8            | 102.4                               | 93.1            |
| Total for associations:  | 100.7                       | 101.9           | 100.3                               | 101.1           |

12659

CSO: 1822/283

OIL AND GAS

AZSSR OIL AND GAS PRODUCTION FIGURES FOR JANUARY-MARCH 1985

Baku VYSHKA in Russian 7 Apr 85 p 1

[Oil and Gas Production Reports under the rubric "Oil and Gas: How Production Is Progressing"]

AZSSR TsSU [Central Statistical Administration] FIGURES ON FULFILLMENT OF  
OIL AND GAS RECOVERY PLANS FOR JANUARY-MARCH 1985

|   | (in percentages toward plan) |                 |                 |                 |
|---|------------------------------|-----------------|-----------------|-----------------|
|   | MARCH                        |                 | JANUARY-MARCH   |                 |
|   | OIL<br>RECOVERY              | GAS<br>RECOVERY | OIL<br>RECOVERY | GAS<br>RECOVERY |
| AZNEFT ASSOCIATION  | 100.0                        | 103.7           | 100.1           | 103.8           |
| Leninft NGDU [Petroleum and Gas Production Association] (Ya. Shirinov, chief; E. Makhmudov, party organization secretary) | 100.0                        | 100.1           | 100.0           | 100.2           |
| NGDU imeni 26 Baku Commissars (A. Bagiyev and Ch. Mustafayev)   | 103.2                        | 102.2           | 101.1           | 103.9           |
| Ordzhonikidzeneft NGDU (Z. Aagiyev and R. Ragimov)  | 100.0                        | 110.9           | 100.0           | 109.1           |
| Karadagneft NGDU (K. Kerimov and Z. Abasov)   | 103.9                        | 104.1           | 101.9           | 104.2           |
| Kirovneft NGDU (T. Mamedov and I. Igrabimov)  | 100.0                        | 101.4           | 100.0           | 101.1           |
| Azizbekovneft NGDU (T. Gasanov and A. Bakhbanly)  | 100.0                        | 120.1           | 100.0           | 125.8           |
| Siazanneft NGDU (R. Mamedov and M. Bekdamirov)  | 100.0                        | 100.3           | 100.0           | 103.0           |
| Shirvanneft NGDU (V. Mamedov and Z. Geydarov)   | 103.1                        | 100.4           | 101.1           | 100.4           |
| Salyanyneft NGDU (F. Guseynov and G. Gasanov)   | 104.8                        | 104.5           | 101.7           | 102.8           |
| Neftechalaneft NGDU (S. Mamedov and R. Kerimov)   | 100.6                        | 109.7           | 100.2           | 110.2           |
| Muradkhanlyneft NGDU (B. Orudzhev and I. Babayev)   | 48.2                         | 100.0           | 82.5            | 100.0           |
| KASPMORNEFTEGAZPROM [Caspian Sea Offshore Oil and Gas Industry] VPO [All-Union Production Association]                    | 100.5                        | 100.3           | 100.5           | 100.7           |

(in percentages toward plan)

|  | MARCH           |                 | JANUARY-MARCH   |                 |
|--|-----------------|-----------------|-----------------|-----------------|
|  | OIL<br>RECOVERY | GAS<br>RECOVERY | OIL<br>RECOVERY | GAS<br>RECOVERY |
| PO [Production Association] imeni 22nd<br>CPSU Congress (S. Ibragimov, director;<br>N. Zaidov, party organization secretary) | 100.5           | 118.6           | 101.4           | 127.6           |
| Artemneftegaz NGDU (B. Khalilov, chief; and<br>T. Azizov)  | 100.0           | 134.2           | 101.7           | 139.7           |
| NGDU imeni Serebrovskiy (F. Musayev and<br>N. Gridnevskiy)   | 106.6           | 103.0           | 106.6           | 104.6           |
| NGDU imeni N. Narimanov (G. Gumbatov and<br>E. Mamedov)  | 100.0           | 105.5           | 96.5            | 99.7            |
| Bulla-more NGDU imeni 50-letiyе SSSR (B.<br>Mamedov and B. Mirzabekov)   | 100.0           | 90.9            | 101.6           | 92.3            |
| Total for associations:  | 100.4           | 100.4           | 100.3           | 100.9           |

12659

CSO: 1822/283



OIL AND GAS

AZSSR OIL AND GAS PRODUCTIN FIGURES FOR JANUARY-APRIL 1985

Baku VYSHKA in Russian 10 May 85 p 2

[Oil and Gas Production Reports under the rubric "Oil and Gas: How Production Is Progressing"]

AzSSR TsSU [Central Statistical Administration] FIGURES ON FULFILLMENT OF OIL AND GAS RECOVERY PLANS BY THE AZNEFT ASSOCIATION AND THE KASPMORNEFTEGAZPROM [Caspian Sea Offshore Oil and Gas Industry] VPO [All-Union Production Association] FOR JANUARY-APRIL 1985

|   | (in percentages toward plan) |                          |                                  |                                  |
|---|------------------------------|--------------------------|----------------------------------|----------------------------------|
|   | APRIL<br>OIL<br>RECOVERY     | APRIL<br>GAS<br>RECOVERY | JANUARY-APRIL<br>OIL<br>RECOVERY | JANUARY-APRIL<br>GAS<br>RECOVERY |
| AZNEFT ASSOCIATION  | 88.1                         | 105.4                    | 97.1                             | 104.2                            |
| Leninneft NGDU [Petroleum and Gas Production Association] (Ya. Shirinov, chief; E. Makhmudov, party organization secretary) | 83.9                         | 100.4                    | 96.0                             | 100.3                            |
| NGDU imeni 26 Baku Commissars (A. Bagiyev and Ch. Mustafayev)   | 100.1                        | 101.9                    | 100.9                            | 103.4                            |
| Ordzhonikidzeneft NGDU (Z. Tagiyev and R. Ragimov)  | 86.2                         | 107.4                    | 96.6                             | 108.7                            |
| Karadagneft NGDU (K. Kerimov and Z. Abasov)   | 101.4                        | 101.2                    | 101.8                            | 103.5                            |
| Kirovneft NGDU (T. Mamedov and I. Ibragimov)  | 84.3                         | 103.5                    | 96.1                             | 101.7                            |
| Azizbekovneft NGDU (T. Gasanov and A. Bakhbanly)  | 100.0                        | 143.9                    | 100.0                            | 130.0                            |
| Siazanneft NGDU (R. Mamedov and M. Bekdamirov)  | 80.6                         | 100.6                    | 95.1                             | 102.4                            |
| Shirvanneft NGDU (V. Mamedov and Z. Geydarov)   | 83.3                         | 105.3                    | 96.7                             | 101.7                            |
| Salyanyneft NGDU (F. Guseynov and G. Gasanov)   | 100.0                        | 105.6                    | 101.3                            | 103.5                            |
| Neftechalanneft NGDU (S. Mamedov and R. Kerimov)  | 100.0                        | 126.7                    | 100.2                            | 113.5                            |
| Muradkhanlyneft NGDU (B. Orudzhev and I. Babayev)   | 57.2                         | 100.0                    | 75.0                             | 100.0                            |

|   | (in percentages toward plan) |          |               |          |
|---|------------------------------|----------|---------------|----------|
|   | APRIL                        |          | JANUARY-APRIL |          |
|   | OIL                          | GAS      | OIL           | GAS      |
|   | RECOVERY                     | RECOVERY | RECOVERY      | RECOVERY |
| KASPMORNEFTEGAZPROM VPO   | 100.5                        | 101.1    | 100.5         | 100.8    |
| PO [Production Association] imeni 22nd CPSU Congress (S. Ibragimov, director; N. Zaydov party organization secretary) | 100.0                        | 100.0    | 101.0         | 120.0    |
| Artemneftegazprom NGDU (B. Khalilov and T. Azizov)  | 101.7                        | 158.3    | 101.7         | 144.2    |
| NGDU imeni Serebrovskiy (J. Musayev and N. Gridnevskiy)   | 104.1                        | 100.7    | 106.0         | 103.6    |
| NGDU imeni N. Narimanov (G. Gumbatov and Z. Mamedov)  | 100.0                        | 100.2    | 97.4          | 99.8     |
| Bulla-mor: NGDU imeni 50-letiya SSSR (B. Mamedov and B. Mirzabekov)   | 100.0                        | 100.7    | 101.2         | 94.2     |
| Total for associations:   | 96.6                         | 101.3    | 99.4          | 101.0    |

12659

CSO: 1822/283

OIL AND GAS

AZSSR OIL AND GAS PRODUCTION FIGURES FOR JANUARY-MAY 1985

Baku VYSHKA in Russian 7 Jun 85 p 1

[Oil and Gas Production Reports under the rubric "Oil and Gas: How Production Is Progressing"]

AzSSR TsSU [Central Statistical Administration] FIGURES ON FULFILLMENT OF OIL AND GAS RECOVERY PLANS BY THE AZNEFT ASSOCIATION AND THE KASPMORNEFTEGAZPROM [Caspian Sea Offshore Oil and Gas Industry] VPO [All-Union Production Association] FOR JANUARY-MAY 1985

|   | (in percentages toward plan) |                 |                 |                 |
|---|------------------------------|-----------------|-----------------|-----------------|
|   | MAY                          |                 | JANUARY-MAY     |                 |
|   | OIL<br>RECOVERY              | GAS<br>RECOVERY | OIL<br>RECOVERY | GAS<br>RECOVERY |
| AZNEFT ASSOCIATION  | 91.8                         | 104.9           | 96.0            | 104.4           |
| Leninneft NGDU [Petroleum and Gas Production Association] (Ya. Shirinov, chief; E. Makhmudov, party organization secretary) | 94.1                         | 104.9           | 95.6            | 101.2           |
| NGDU imeni 26 Baku Commissars (A. Bagiyev and Ch. Mustafayev)   | 100.0                        | 101.3           | 100.7           | 103.0           |
| Ordzhonikidzeneft NGDU (Z. Tagiyev and R. Ragimov)  | 100.0                        | 112.8           | 97.3            | 109.5           |
| Karadagneft NGDU (K. Kerimov and L. Larina)   | 100.9                        | 100.8           | 101.6           | 102.9           |
| Kirovneft NGDU (T. Mamedov and I. Ibragimov)  | 100.0                        | 101.8           | 96.9            | 101.7           |
| Azizbekovneft NGDU (T. Gasanov and A. Bakhbanly)  | 100.0                        | 128.3           | 100.0           | 129.7           |
| Siazanneft NGDU (R. Mamedov and M. Bekdamirov)  | 87.6                         | 94.3            | 93.6            | 100.7           |
| Shirvanneft NGDU (V. Mamedov and Z. Geydarov)   | 91.9                         | 105.1           | 95.7            | 102.3           |
| Salyanyneft NGDU (F. Guseynov and G. Gasanov)   | 70.2                         | 110.1           | 94.9            | 104.9           |
| Neftechalaneft NGDU (S. Mamedov and R. Kerimov)   | 100.3                        | 100.0           | 71.4            | 100.0           |
| Muradkhanlyneft NGDU (B. Orudzhev and I. Babayev)   | 61.9                         | 100.0           | 71.4            | 100.0           |

(in percentages toward plan)

|  | MAY             |                 | JANUARY-MAY     |                 |
|--|-----------------|-----------------|-----------------|-----------------|
|  | OIL<br>RECOVERY | GAS<br>RECOVERY | OIL<br>RECOVERY | GAS<br>RECOVERY |
| KASPMORNEFTEGAZPROM VPO  | 100.7           | 102.4           | 100.5           | 101.1           |
| PO [Production Association] imeni 22nd CPSU<br>Congress (S. Ibragimov, director; N. Zaydov,<br>party organization secretary) | 100.0           | 100.0           | 100.8           | 115.6           |
| Artemneftegaz NGDU (B. Khalilov and T.<br>Azizov)  | 100.0           | 163.2           | 101.4           | 148.1           |
| NGDU imeni Serebrovskiy (F. Musayev and N.<br>Gridnevskiy)   | 106.7           | 102.1           | 106.1           | 103.3           |
| NGDU imeni N. Narimanov (G. Gumbatov and E.<br>Mamedov)  | 100.0           | 102.8           | 97.9            | 100.4           |
| Bulla-more NGDU imeni 50-letiyе SSSR (B.<br>Mamedov and B. Mirzabekov)   | 100.0           | 100.6           | 100.9           | 95.5            |
| Total for associations:  | 97.9            | 102.6           | 99.1            | 101.3           |

12659

CSO: 1822/283



OIL AND GAS

AZSSR OIL AND GAS PRODUCTION FIGURES FOR JANUARY-JUNE 1985

Baku VYSHKA in Russian 7 Jul 85 p 1

[Oil and Gas Production Reports under the rubric "Oil and Gas: How Production Is Progressing"]

AzSSR TsSU [Central Statistical Administration] FIGURES ON FULFILLMENT OF OIL AND GAS RECOVERY PLANS BY THE AZNEFT ASSOCIATION AND THE KASPMORNEFTEGAZPROM [Caspian Sea Offshore Oil and Gas Industry] VPO [All-Union Production Association] FOR JANUARY-JUNE 1985

|   | (in percentages toward plan) |                 |                 |                 |
|---|------------------------------|-----------------|-----------------|-----------------|
|   | JUNE                         |                 | JANUARY-JUNE    |                 |
|   | OIL<br>RECOVERY              | GAS<br>RECOVERY | OIL<br>RECOVERY | GAS<br>RECOVERY |
| AZNEFT ASSOCIATION  | 93.2                         | 103.3           | 95.5            | 104.2           |
| Leninneft NGDU [Petroleum and Gas Production Association] (Ya. Shirinov, chief; E. Makhmudov, party organization secretary) | 92.9                         | 108.1           | 95.1            | 102.4           |
| NGDU imeni 26 Baku Commissars (A. Bagiyev and Ch. Mustafayev)   | 100.1                        | 101.7           | 100.6           | 102.7           |
| Ordzhonikidzeneft NGDU (Z. Tagiyev and R. Ragimov)  | 100.0                        | 111.1           | 97.7            | 109.8           |
| Karadagneft NGDU (K. Kerimov and L. Larina)   | 100.9                        | 101.0           | 101.5           | 102.6           |
| Kirovneft NGDU (T. Mamedov and I. Ibragimov)  | 100.1                        | 101.1           | 97.4            | 101.6           |
| Azizbekovneft NGDU (T. Gasanov and A. Bakhbanly)  | 100.0                        | 106.1           | 100.0           | 125.9           |
| Siazanneft NGDU (R. Mamedov and M. Bekdamirov)  | 100.0                        | 100.4           | 94.7            | 100.7           |
| Shirvanneft NGDU (V. Mamedov and Z. Geydarov)   | 89.6                         | 100.2           | 94.7            | 102.0           |
| Salyanyneft NGDU (F. Guseynov and G. Gasanov)   | 100.2                        | 107.1           | 95.8            | 105.2           |
| Neftechalaneft NGDU (S. Mamedov and R. Kerimov)   | 100.0                        | 100.0           | 100.2           | 109.6           |
| Muradkhanlyneft NGDU (B. Orudzhev and I. Babayev)   | 45.8                         | 100.0           | 65.4            | 100.0           |

(in percentages toward plan)

|  | JUNE            |                 | JANUARY-JUNE    |                 |
|--|-----------------|-----------------|-----------------|-----------------|
|  | OIL<br>RECOVERY | GAS<br>RECOVERY | OIL<br>RECOVERY | GAS<br>RECOVERY |
| KASPMORNEFTEGAZPROM VPO  | 101.0           | 102.4           | 100.6           | 101.3           |
| PO [Production Association] imeni 22nd CPSU<br>Congress (S. Ibragimov, director; N. Zaydov,<br>party organization secretary) | 100.0           | 100.0           | 100.7           | 112.7           |
| Artemneftegaz NGDU (B. Khalilov and T.<br>Azizov)  | 100.0           | 169.2           | 101.1           | 151.5           |
| NGDU imeni Serebrovskiy (F. Musayev and N.<br>Gridnevskiy)   | 107.1           | 102.2           | 106.3           | 103.1           |
| NGDU imeni N. Narimanov (G. Gumbatov and E.<br>Mamedov)  | 100.0           | 101.3           | 98.2            | 100.6           |
| Bulla-more NGDU imeni 50-letiyе SSSR (B.<br>Mamedov and B. Mirzabekov)   | 102.5           | 100.8           | 101.2           | 95.5            |
| Total for associations:  | 98.6            | 102.5           | 99.0            | 101.5           |

12659

CSO: 1822/283

OIL AND GAS

BRIEFS

**SHIRVANNEFT WORKERS EXCEED PLAN--**Ali-Bayramly--The field facilities under Sadagyat Azizov, oil and gas recovery foreman for the Shirvanneft NGDU [Petroleum and Gas Production Administration], which services the Kalameddin Field, have brought in another new development well. A few days after Well No 162 was successfully completed, a flowing stream of oil was obtained from the 4th horizon of the pay zone. This well pours 25-30 t of oil into the reservoirs every day from a depth of 1,600 m. This new well was drilled and completed with a high degree of quality by the drilling crew headed by experienced supervisor Gadir Salimov, from the Ali-Bayramly UBR [Drilling Operations Administration]. This drilling collective has overfulfilled its assignment for five months of the last year of the five-year plan period as its members compete for a worthy greeting to the 27th CPSU Congress. [By S. Garayev] [Excerpts] [Baku VYSHKA in Russian 8 Jun 85 p 1] 12659

**SWAMP VEHICLE PRICE CHECKED--**USSR Goskomsen [State Committee on Prices] has made a check into the correctness of the wholesale price set by Minneftegazstroy [Ministry of Construction of Petroleum and Gas Industry Enterprises] for the BT-361 swamp-traversing vehicle, produced by the Kropotkin Experimental Machine-Building Plant. A 1000-ruble wholesale price increase has been set (this vehicle makes up about 80 percent of the proportionate share of the plant's commodity output). Moreover, in view of the considerable change in the conditions for cooperation in comparison with those conditions which were taken into account when the quotas for net production were being set, the quota for this product was not corrected by the plant. A decision has been made to withdraw R300,000 from this plant, which amount was obtained through a violation of state pricing discipline, and to exclude the total amount exceeding the norms from the accounting information concerning the fulfillment of the plan for 1984 net production volumes. This will be done by way of a re-accounting of the interrelated indicators, the calculations of which are based on the NChP [standard net production]. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian, No 20, May 85 p 12] 12659

**MINGAZPROM'S PIPELINE CLEANING EQUIPMENT--**Drogobych, Lvov Oblast (RATAU)--A number of machines, series production of which has been organized at Mingazprom's [Ministry of the Gas Industry] Experimental and Mechanical Special Equipment Plant, will greatly accelerate the rates and improve the quality of gas pipeline repair. The first lot of these new units was sent from here yesterday to the Bukhara-Urals and Central Asia-Tsentr main lines, where pre-

8 October 1985

ventive maintenance operations are being carried out. During previous repairs of damaged areas of the pipeline, large sections had to be cut out and separated. Now, the machine's tool removes the protective layer accurately and quickly as it uncovers those damaged sections of the pipeline which have been detected. Thanks to this procedure, only the irreparable "sick" pieces of the pipeline are replaced. Use of this machine increases the productivity of the repair work 1.5-fold. The advantage of this innovation, which was proposed by the Drogobych PKTB [Planning and Design Production Bureau] of the Soyuzgazmashremont [All-Union Gas Machinery Repair Industrial Association], consists as well in the fact that its manufacture is easy to set up: the majority of its assemblies and parts are universal for all the mechanisms in use in the gas industry. [Text] [Kiev RABOCHAYA GAZETA in Russian 5 Jun 85 p 1] 12659

NEW OFFSHORE DRILLING RIG--Baku--A new self-raising drilling rig, the "40 Years of the Victory", which has come down from the building slips of the Astrakhan Shipbuilding Association, has begun work. Geophysicists have discovered structures favorable to the occurrence of raw hydrocarbons in the promising Altay-more area. Plans call for the drilling of a well over 5,000 m deep here. This new rig is full of automatic and remote control equipment. Drilling operations are carried out within an enclosed system, thus precluding contamination of the environment. [By D. Melikov, SOTSIALISTICHESKAYA INDUSTRIYA correspondent] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 1 Mar 85 p 1] 12659

USINSK BRIGADE'S DRILLING SUCCESSES--Usinsk, Komi ASSR--A brigade of the Usinsk Drilling Operations Administration under the leadership of the well-known supervisor F. Iskhakov has drilled almost 90,000 m worth of development wells since the beginning of the five-year plan period. This surpasses the collective's five-year plan assignment. The drillers plan to drill several more wells before year's end, thus bringing the brigade's overall footage up to 100,000 m for the first time in the Komineft Association. [By V. Krukovskiy, SOTSIALISTICHESKAYA INDUSTRIYA correspondent] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 17 May 85 p 3] 12659

HYDRAULIC DREDGES TO SIBERIA--Andropov, Yaroslavl Oblast--New hydraulic dredges, series production of which has been started at a hydraulic mining and earth-moving plant, have been sent to Siberian oil workers and miners. The machines can work soils at depths of up to 12 m, which surpasses the capabilities of previously produced units by 1.5-fold. The enterprise collective is preparing for production of another series of improved hydraulic dredges, which can work from 200 to 1,000 m<sup>3</sup> of soil per hour. [Text] [Moscow SELSKAYA ZHIZN in Russian 2 Apr 85 p 1] 12659

KARADAGNEFT COLLECTIVE SURPASSES PLAN--Baku 5 [July]--Work totals for a Karadagneft NGDU [Petroleum and Gas Production Administration] collective have come to 1,900 t of oil and 1,600,000 m<sup>3</sup> of gas above the plan for the first half year. It is important to emphasize that these field workers have not only stabilized oil recovery, but have increased it, and have done so in old, long-developed areas. Daily recovery levels have increased an average of 15 t compared to 1983. [Excerpt] [Baku VYSHKA in Russian 6 Jul 85 p 1] 12659



**KALAMEDDIN FIELD INCREASES RECOVERY**--Ali-Bayramly--Well No 87, which was put into operation last month, has increased the daily oil recovery level by 20 t in the promising Kalameddin area. Another well, No 71, which was also turned over ahead of schedule by the field workers, is producing 50-60,000 m<sup>3</sup> of gas per day. Following the addition of Well No 104 into the well stock, the number of operating petroleum facilities in this young area was brought up to 27 units. They are all operating on a new routine, and punctually add above-plan amounts of fuel into the storage tanks. The oil workers expect the field facilities to be added to by the end of May. Completion work is under way to turn over three new Shirvanneft NGDU [Petroleum and Gas Production Administration] development wells. The collectives are drilling wells No 139, No 145 and No 162, which are headed toward the oil-bearing 4th horizon of the pay zone, at headlong rates. [By S. Garayev] [Excerpts] [Baku VYSHKA in Russian 16 May 85 p 1] 12659

**KAZAKH OIL WORKERS' SUCCESSES**--Guryev--Emba River area oil workers have responded to the party call to develop pre-Congress socialist competition with practical deeds. The four-month plan for oil recovery has been overfulfilled. The country has received an additional 6,300 t of oil. Production costs for the recovered oil were reduced by almost two percent. Well shut-downs have been sharply curtailed. The greatest success in the socialist competition has been achieved by a collective of the Zhaikneft Oil and Gas Recovery Administration. This collective has held first place in the Embaneft Association's oil field workers' competition for a long time. Material outlays for recovery in a single ton of oil have been reduced by 6.1 percent here. Labor productivity exceeds plan figures by 2.6 percent. Two workdays worth of material resources have been accumulated. [By N. Pototskiy] [Text] [Moscow TRUD in Russian 28 May 85 p 1] 12659

**AZSSR BRIGADES' PRODUCTION SUCCESSES**--Neftechala--Seidgasan Kyazimov's drilling crew, which is part of the Prikurinskiy UBR [Drilling Operations Administration] has put Well No 416, in the Khilly area, into operation one month ahead of schedule. The well produces a daily 35-ton flow of oil from a depth of 1,708 m. This is the third producing well turned over to the field workers by this leading crew. All three of their wells are now producing over 100 t of oil per day in all. S. Kyazimov's crew, by sinking 4,440 m of steel shaft instead of 2,800 m, has overfulfilled their half-year footage plan. They hold the drilling record for last year for the Azneft Association as a whole. They have 10,000 m of yearly drilling progress to their account. They have successfully fulfilled their five-year plan assignment by drilling 35,000 m instead of 28,700 m. [By A. Akhadov, Prikurinskiy UBR senior geologist] [Excerpt] [Baku VYSHKA in Russian 5 Jul 85 p 1] 12659

**KOMINEFT WORKERS TO ARCTIC**--Usinsk--Workers of the Komineft Association have set to work constructing an experimental field in the Kharyaga Field. Dozens of living-cars, sets of prefabricated housing complexes, bulldozers and excavators, diesel power plants, fuel and provisions have been delivered along the winter road to the area of the future field. The sand and gravel quarries are working at full capacity. Dozens of dump trucks are filling areas for the expeditionary shift settlement and the field facilities onto the permafrost. A highway is being built at headlong speed. Construction of

8 October 1985

a mooring wall is being completed on the bank of the Kolva River, which is still jammed with ice. The excursion of oil workers from the Komi ASSR to Kharyaga is initiating the beginning of operations for developing the oil and gas fields of the Mainland Tundra. Collectives of the Permdorstroy [Perm Oblast Road Construction], Komienergostroy [Komi ASSR Power Construction] and Mostostroy-6 [Bridge Construction] Trusts are helping them in this project. [By V. Ilyin] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 19 Jun 85 p 2] 12659

URENGOY DRILLING UP—Drilling crews from Ukgazprom enterprises working in the Urengoy field completed a five-month drilling project on May 27, ahead of plan. Ukrainian drillers' first-quarter work record virtually guaranteed early completion. On the whole, total footage drilled increased 17.8 percent over the same period last year. Drilling in the Urengoy field was up 43.5 percent and gas storage drilling was up 78.8 percent. [Text] [Moscow GAZOVAYA PROMYSHLENNOST in Russian No 7, Jul 85 p 3] [COPYRIGHT: Izdatelstvo "Nedra" "Gazovaya promyshlennost," 1985] 8844

GAS FIELDS DISCOVERED—Geologists and drillers from Turkmengazprom All-Union Production Association discovered the Kyrkkui and Babaarap fields and the Vostochnyy Uch-Adzhi gas reservoir. In February gas shows from the deepest Calloway-Oxford beds were reported in one of the wells in the Dzhuramergeren field. Development drilling is now under way in this area to bring in the new fields. [Text] [Moscow GAZOVAYA PROMYSHLENNOST in Russian No 7, Jul 85 p 3] [COPYRIGHT: Izdatelstvo "Nedra" "Gazovaya promyshlennost," 1985] 8844

NEW SUBSTATION—A 36/6-kW substation is now in service on Block 5 of the Sovetabadsky gas condensate field. Drilling rigs can now depend on a reliable supply of electricity. As a result, rig downtime has been reduced and drilling productivity and efficiency have been increased. [Text] [Moscow GAZOVAYA PROMYSHLENNOST in Russian No 7, Jul 85 p 3] [COPYRIGHT: Izdatelstvo "Nedra" "Gazovaya promyshlennost," 1985] 8844

STATE FARM AT DRILLING ENTERPRISE—A state farm has been organized at the Turkmenyuzhburgaz Drilling Production Association and named Sovetabad. Field preparation work is under way on a rush basis, and three cow sheds are in use. Fresh food supplies for the association's drilling crews have been considerably improved. [Text] [Moscow GAZOVAYA PROMYSHLENNOST in Russian No 7, Jul 85 p 3] [COPYRIGHT: Izdatelstvo "Nedra" "Gazovaya promyshlennost," 1985] 8844

**NEW REMOTE-CONTROLLED PIPELINE VALVE**--The new KZU-160/100 valve, made in Saratov, is being installed on all rebuilt facilities in the East and West Shatlyk fields to provide remote-controlled operation of gathering lines. It prevents spontaneous shut-offs and eliminates burst lines due to excessive pressures. [Text] [Moscow GAZOVAYA PROMYSHLENNOST in Russian No 7, Jul 85 p 11] COPYRIGHT: Izdatelstvo "Nedra" "Gazovaya promyshlennost," 1985] 8844

**MUBARAK GAS REFINERY PROGRESS**--Unit 9 equipment at the Mubarak Gas Refinery is being adjusted for service. This year still another production unit will be placed on stream and a gas refrigeration unit will be installed. Start-up of these units brings the Mubarak Gas Refinery one step closer to full capacity. [Text] [Moscow GAZOVAYA PROMYSHLENNOST in Russian No 7, Jul 85 p 11] [COPYRIGHT: Izdatelstvo "Nedra" "Gazovaya promyshlennost," 1985] 8844

**NEW OFFSHORE PLATFORM DESIGN**--A model of a stationary deep-water offshore drilling platform for a cluster of oil and gas wells is attracting attention at the USSR National Economic Achievement Exhibition. But the model has a life-size counterpart on the 28 April Block in the Caspian Sea. It was built with a new technology utilizing buoyant units. The units' shallow draft, two meters maximum, makes it possible to construct the platform on the assembly platform and launch individual units into the water using ramps. The platform is installed in place without the use of any special flotation equipment. Some 24 wells will be drilled from the platform. [Text] [Moscow GAZOVAYA PROMYSHLENNOST in Russian No 7, Jul 85 p 11] [COPYRIGHT: Izdatelstvo "Nedra" "Gazovaya promyshlennost," 1985] 8844

**NATURAL GAS FILLING STATION**--The first gas filling station in the area has been opened in Kharkov. It consists of several compact units which further refine ordinary natural gas from the city distribution system, compress it to 25 MPa and store it in special tanks. A car's tanks can be filled in a few minutes. The station is designed to handle 500 cars a day. [Text] [Moscow GAZOVAYA PROMYSHLENNOST in Russian No 7, Jul 85 p 11] [COPYRIGHT: Izdatelstvo "Nedra" "Gazovaya promyshlennost," 1985] 8844

**EXPLORATION WELLS IN KAMCHATKA**--Eight exploration wells have been drilled in the Kshukskaya area on the Kamchatka Peninsula. Five of the wells tailed into gas-bearing formations. Wells 5 and 8 flowed gas in commercial quantities. [Text] [Moscow GAZOVAYA PROMYSHLENNOST in Russian No 7, Jul 85 p 11] [COPYRIGHT: Izdatelstvo "Nedra" "Gazovaya promyshlennost," 1985] 8844

**REMOTE-CONTROLLED PIPELINE**--The problems of putting new technology into practice are receiving considerable attention at the Shatlykgazdobysha Production Association. High-unit-capacity prefab equipment is being used in field construction. The Bayram-Ali-Ashkhabad-Bezmein pipeline is being equipped with remote-controlled capability. [Text] [Moscow GAZOVAYA PROMYSHLENNOST in Russian No 7, Jul 85 p 11] [COPYRIGHT: Izdatelstvo "Nedra" "Gazovaya promyshlennost," 1985] 8844

**ANTI-CORROSIVE "GREASE"**--An interesting solution to the problem of protecting well and pipeline equipment from corrosion has been discovered. The North Caucasus Natural Gas Scientific Research Institute has recommended the "grease" method, which reduces annual corrosion to 0.1 mm. [Text] [Moscow GAZOVAYA PROMYSHLENNOST in Russian No 7, Jul 85 p 11] [COPYRIGHT: Izdatelstvo "Nedra" "Gazovaya promyshlennost," 1985] 8844



COAL

MINISTERS DEBATE COAL PIPELINE CONSTRUCTION DELAY

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 25 May 85 p 2

[Article by A. Valentinov, deputy editor, Construction, Transportation and Communications Department: "A Blind Alley at the Beginning of the Journey: Notes From a Meeting of the Board of the USSR State Committee for Science and Technology"]

[Text] "We created a leading institute for the problem: VNIIPgidrotruboprovod [not further identified]. We studied all the domestic and foreign experience. Finally, we took upon ourselves the functions of a planning organization. Somehow, it is necessary to move this matter from a standstill!"

For some reason, from all that was said at the meeting of the board, this end to the speech made by Minister of Construction of Petroleum and Gas Industry Enterprises V.G. Chirskov made a particular impression on my memory. Probably because, in contrast to several others who spoke, the minister spoke specifically, made constructive suggestions and did not try to lay the blame on other branches. But, personally, how could he talk otherwise when the subject was about an extremely important project, all the construction dates for which have been torn to shreds?

Let us make a small digression. The problem of economy of gas and oil made it absolutely necessary to speed up the work being done to replace them in a number of types of production with other forms of fuel. More than 20 years ago an idea was born that promised revolutionary shifts in power engineering. It was that thermal electric power plants, boiler rooms and plant heating furnaces be reconverted to coal. However, it was not to be transported to the burners by railroad, but pumped through pipes in the form of slurry--pulverized and mixed with water. Besides the fact that this would free hundreds of thousands of railroad cars and eliminate coal losses in transit that reach 10 percent of the total quantity, coal slurry would make it possible to do without substantial alterations of most existing heating units that were suitable for burning liquid or gaseous fuel.

In opening the meeting of the board, Deputy Chairman of the USSR Council of Ministers and Chairman of the GKNT [State Committee for Science and Technology] G.I. Marchuk recalled that in 1979, USSR Minugleprom [Ministry of the Coal



Industry], Minneftegazstroy [Ministry of Construction of Petroleum and Gas Industry Enterprises] and USSR Minenergo [Ministry of Power and Electrification] were charged with developing an engineering plan for a 250-km Belovo-Novosibirsk experimental-industrial coal pipeline. Every year it was to transport 3 million tons of coal from the "Inskaya" mine to the city's TETs-5. Its efficient operation would open paths for the creation of gigantic main coal pipelines stretching for thousands of kilometers and feeding a number of large enterprises along their routes.

According to the assignment, the Belovo-Novosibirsk coal pipeline was to be built and put into operation in the 1982-1984 period. USSR Minugleprom was given the functions of general buyer and general planner. It would also operate the coal pipeline. Naturally, the ministry assigned the development of the project to its subordinate institute VNIIGidrougol [All-Union Scientific Research, Design and Planning Institute of Hydraulic Coal Mining].

The extremely tense situation with this construction project was also the subject of an examination at the board meeting of the USSR State Committee on Science and Technology. And it could be hoped that here there would be a specific, businesslike discussion and that the objective causes interfering with the construction would be uncovered.

It cannot be said that these hopes were fully realized. Some of those present apparently forgot that this was why the board had gathered, in order to define clearcut measures for the realization of the assignment. For instance, statements were heard in favor of the first, rejected version of the coal pipeline plan. It was based on technology developed at experimental installations, where the coal was mixed half-and-half with water, with the water being wrung out in centrifuges and discharged into rivers before the coal was burned. Under the conditions of an industrial coal pipeline this meant that out of the mass that was being pumped, half would be used for business, but a huge amount of water contaminated with coal dust would enter the extremely complex problem of environmental conservation. Inasmuch as further research opened new possibilities, it was suggested to the scientists that they develop new technology in which the coal in the slurry would amount to 70 percent and the entire mixture would be burned completely in the fire chambers. Correspondingly, the date for starting the pipeline was moved to 1985.

However, despite the clear instructions, until now there is no plan for the Belovo-Novosibirsk coal pipeline. The technology for burning 70-percent coal slurry has not been worked out, either. The problem of remodeling the boilers has also not been solved. In planning TETs-5 in Novosibirsk, the power engineers simply did not figure the pipeline into the design.

Minenergo's representatives give as a reason the fact that Minugleprom refuses to supply them with coal having an ash content not exceeding 10 percent, but proposes at least 14 percent. Coals with that ash content, the power engineers protest, cannot be consumed by boilers. In turn, Minugleprom demands that the power engineers take coal with an increased ash content because, they say, there is no other in the Kuzbass.

First Deputy Ministry of the Coal Industry M.I. Shchadov began his address at the board meeting with this: it would require 10 years and 60 million R of capital investments for the modernization of the "Inskaya" mine and the construction of an enrichment factory. Without this the coal people would not have the capability of satisfying the power engineers' claim.

However, all this work was provided for in the 1979 assignment. But dates passed and the means were used for other purposes. And M.I. Shchadov was not to explain this fact satisfactorily. And he did not utter a word about another, truly astonishing fact: all three cars of coal sent from the "Inskaya" mine for scientific research had an ash content...of less than 10 percent.

The truth does not always thrive in arguments. Sometimes people resort to obscuring the truth in arguments. And an unexpected result of the 5-year discussion about ash content was summed up at the meeting of the GKNT board by Academician M.A. Styrikovich, who declared that for these coals, on the operation of boilers it...will have practically no effect. This was also confirmed by Professor G.N. Delyagin, who conducted experiments during which the ash content of coal slurry reached 30 percent, and it burned splendidly.

Minugleprom's and Minenergo's positions are clear. Each of these ministries, recognizing the vast economic importance of the problem of transporting coal slurry with pipelines, assumes that it is "not in his department." The coal people have protested that their business is to get the coal up to the ground. In turn, the power engineers have a similar viewpoint: the limits of our responsibility are no further than the fireboxes. The third participant--Minneftegazstroy--takes a different position. Its job is to build. And it is building the coal pipeline--without waiting for the completion of the plan. Moreover, it is taking upon itself part of the work of its neighbors. This year, the ministry's subordinate institute, VNIPIgidrotruboprovod, has been charged with finishing the plan for the route as a whole. But before this, Minneftegazstroy was assigned to act as general contractor for construction. Minister V.G. Chirkov also spoke about this.

Things are moving, although intolerably slowly. Right now, the documents for the purchase of the necessary equipment have been prepared. Minenergomash [Ministry of Power Machine Building] has given instructions to remodel TETs-5's boilers for coal slurry. Other measures have been taken. However, all of them by no means guarantee success until Minugleprom and Minenergo stop opposing departmental interests to state ones and shifting the responsibility to each other. G.I. Marchuk gave special emphasis to this in his speech at the board meeting.

It seems there is nothing more to say.

11746

CSO: 1822/249

## COAL

### NEW MANAGEMENT FORMS, TECHNOLOGY DISCUSSED

Moscow PRAVDA in Russian 27 Apr 85 p 3

[Article by A. Bogachuk, special correspondent, Kemerovo Oblast: "The Record Became the Norm; Leading Experience, the Effect of Implementation"]

[Excerpts] Since the beginning of the five-year plan, more than 1.5 million tons of above-plan coal have been sent to the surface by the miners at one of the largest production associations in the country, Yuzhkuzbassugol. Their success was determined by a movement for the efficient utilization of modern mining technology and the achievement of 1,000 tons of daily fuel extraction from each mechanized longwall.

Now the 1,000-ton daily load became the norm for many collectives. As a matter of fact, in comparison with 1980 the number of "thousand-tonners" at the Yuzhkuzbassugol association's mines increased by almost one-third, and the average daily productivity from a mechanized face topped 1,200 tons. Let us look at some figures for comparison. Although in the branch as a whole, every third mechanized crew produces 1,000 tons of coal a day, in this association 48 of 69 collectives achieved this goal, including 17 who managed to reach at least twice that level. The difference, as we will see, is extremely significant.

Now there appeared equipment for excavating thin beds, and yes, the times have changed. The new and efficient economy management methods make it imperative to make more realistic and economical use of riches from the earth. Last year the crew was already testing its forces on a thin bed: some days, productivity reached 1,000 tons or more.

They prepared the new longwall by the personal order of Crew Leader V. Lapshtayev. The previous one was 190 meters long. If it is lengthened by, let us say, 50 meters, coal extraction with each shaving will increase by 20-25 percent. This met completely the collective's goals and obligations. However, a long longwall requires accidentfree work. Otherwise, the expected profits can turn out to be losses.

The "Raspadskaya" mine is rightfully called the flagship of the coal industry. The largest in the country, today it also occupies key positions in the

realization of scientific and technical progress. In creative collaboration with scientists and designers, it has created mechanized complexes on a new technical level that are capable of insuring the efficient extraction of coal under difficult geological mining conditions. And in this matter, the engineers at the "Raspadskaya" mine and the specialists of the Yuzhkuzbassugol association have earned no small degree of merit.

At times, life requires nonstandard solutions on the part of engineers. A year ago, together with scientists, a unique experiment was conducted here: without stopping, they deployed under the earth and started up at the adjacent longwall a ChKM-130 mechanized complex weighing almost 2,000 tons. Thereby, the possibility of the effective use of powerful units to work reserves in a zone of geological disruptions was proven. Now, P. Prolov's crew, using this "shuttle method," without disassembling the mechanical complex, decided to work the three adjacent longwalls and send a million tons of fuel to the surface. This working initiative received reliable engineering support. This is reminiscent of a conversation with Hero of Socialist Labor V. Devyatko, whose crew was the first in the mine to extract a million tons of coal in a year.

"I am convinced," remarked Vladimir Grigoryevich, "that these days the productivity of a mechanized face is determined not only by working skill, but also the quality of the engineering preparations for production. Figuratively speaking, a million tons is an alloy of working skill and engineering talent."

How to enlarge the ranks of "thousand-tonners and increase the number of heroes? Of course, there is not and cannot be a single, so-called universal, "recipe" for this. We talk today primarily of engineering support for the "thousand-tonner" movement. However, crew forms for the organization of labor do not play the most minor role. The experience amassed at the "Kapitalnaya" mine indicates this most obviously.

The main figure in the preparation section is assumed to be the cutter, with all the rest of the workers being called on to assist him. However, the cutter is paid per meter of cutting, but the mechanics, electric welders and riggers are all paid by the hour. And hours, as is well known, pass without stopping (and the salary does, too), even if the work stops. This is why the cutters proposed that all the section's workers be included in the crew and that the wages be computed per meter of cutting. In those days, B. Starunov's crew, which was well known at the mine, assumed the obligation of producing at least 500,000 tons of coal for the year. On the basis of the example of the cutters here, all of the hourly workers were also included in the crew, and their earnings were in direct relationship to the final result.

What did this yield? Emergency stoppages were reduced sharply, along with labor outlays for auxiliary operations.

11746

CSO: 1822/249



COAL

DECELERATION OF KUZBASS COAL BASIN DEVELOPMENT CRITICIZED

Moscow SOVETSKAYA ROSSIYA in Russian 17 Apr 85 p 2

[Article by L. Reznikov, general director, Kemerovougol Association: "Plus Establishment--Minus Extraction"]

[Text] The heightened interest in the development of the Kuzbass's coal industry is no accident. Coal production in this region has fallen in recent years, and there is no one basis that is capable of replacing the Kuznetsk coal.

Was this drop in coal extraction in the Kuzbass unexpected for some of the specialists? I think not. Not a single coal enterprise has been set up in the basin in the last quarter century. And the modernization of the existing ones is going on at a snail's pace.

For so long and no longer there, part of the output that was lost under the earth was able to be made up for because of an increase in the amount of open-pit work. Last year, however, the pits of the Kemerovougol Association did not fulfill the plan for the first time in the 20 years of its existence. What happened to this leading collective, which produces 39 percent of the coal extracted in the basin?

High production growth rates were seen primarily because of an excess in the enterprises' rated capacity. They were not reinforced by either a corresponding development of underground workings or the introduction of new capacities. Disproportion in the development of open-pit workings also affected last year's results. The production capacity level reached was 105.6 percent, but the plan was not fulfilled. And if we do not stop talking and get to business, the pits in the Kuzbass can expect the same fate as the mines. But the trend toward fading development is, alas, continuing.

USSR Minugleprom's [Ministry of the Coal Industry] contracting organizations, the Kuzbassshakhtostroy and Kuzbasszhilstroy [not further identified] combines, are obligated to occupy themselves with the construction of new and the modernization of existing enterprises and take care of the work at the association's enterprises. The plans for last year were fulfilled by less than half. For comparison I will note that with our own forces we did much more than the powerful Kuzbassshakhtostroy organization.

Planning is assumed to begin with what is possible, not what is desirable. It is cumbersome to prove this unarguable idea, but it is necessary. In the last year of the five-year plan, it was stipulated that 54 million tons of coal would be extracted in the Kuzbass by the open-pit method. The planned assignment is being fulfilled. However, instead of the extraction level substantiated by the assignment, the ministry set for the association a planned level of 56 million tons. The "growth" of 2 million tons deliberately places the coal miners in the category of laggards.

No matter where you look, everywhere there are flaws and there is a shortage of everything. For example, the need for plant repair of equipment was met by only one-fourth. The planned funds for spare parts are considerably below the standards--this means that we are constantly threatened with a stoppage of mining transportation equipment. Multiton BelAZy (motor vehicles made by the Belorussian Automobile Plant) are parked in garages. The "waiting line" for spare parts grows each year.

Recently, people have been talking and writing ever more frequently about the problems of controlling the coal branch in the Kuzbass. Proposals are being advanced about the creation of a single body, in the hands of which would be concentrated all the forces and facilities (mines, pits, mine construction organizations, plants and so on). The idea is attractive but, in my opinion, unrealizable. What would it mean to have a single master in the basin? It would mean organizing something similar to a ministry. But really, can a ministry be created for a single area?

Another version has support: break up the associations, including Kemerovougol, into smaller subunits. At first glance it might appear that the division of production units will make control easier. In reality, instead of powerful associations having large resources, we will have puny pygmies. The advantages of a large association are beyond all doubt, but the division process has not been stopped. In the name of improving control, USSR Minugleprom broke up the Kuzbassugol production association. What is the result? The fuel extraction level fell by almost 5 million tons. Yet another reorganization took place: the Prokopyevskugol association was divided into smaller units--and yet another 3.4 million tons were lost.

Seven years ago in the basin, a superstructure was set up over the associations engaged in underground extraction: the Production Management Administration. During its 2 years of existence--by no means leadership!--coal extraction in the Kuzbass fell off by 5.1 million tons. It would seem, it is now clear, that all these "superstructures" are not necessary. It is other reasons, and not structural ones, that are affecting the drop in coal extraction. However, in place of the PRU there appeared the Kuzbassugol All-Union industrial association, a new administrative element playing the role of middleman between the ministry and the associations. And it proved to be helpless: all the main questions of the production associations, as before, were answered at USSR Minugleprom. The results are lamentable: coal production fell by another 11.7 million tons, but in return the number of administrative personnel increased by 500 people.

Right now in the ministry they are strenuously working out variants for the breakup of our association. For the creation of two or three new associations, they advance as an argument the temporary difficulties that have arisen (nonfulfillment of the extraction plan in the first quarter). The creation of a second association will require an increase in the number of personnel of at least 400 people for the same coal extraction volume. And where to get the workers? From the pits, motor pools, other enterprises. From production work to the clerk's desk!

The national economy will gain nothing from such a reorganization. The creation in the Kemerovougol production association of production operations administrations numbering 15-20 delegated workers is another matter. These small administrations should be given sufficient powers and rights and bear the complete responsibility for the work of the pits, motor pools and other enterprises. This improvement in the administrative structure will make it possible to improve the operational leadership of production in the pits and eliminate negative phenomena that are the result of the territorial scattering of the enterprises.

I am thoroughly convinced that in the Kuzbass there should be the two-element control system that has proven itself: production associations and the ministry. All intermediate elements are superfluous.

The problems of development in the basis grew from regional to all-union ones long ago, and Minuglepirom's efforts to solve them are inadequate. It is difficult to predict what additional complexities will arise in providing the country with fuel if conditions are not created for accelerated development of the Kuzbass's coal industry.

11746

CSO: 1822/249

## COAL

### COAL CONVEYOR AT KANSK-ACHINSK COMPLEX DESCRIBED

Moscow TRUD in Russian 22 Mar 85 p 1

[Article by Yu. Yudin, Sharypovo, Krasnoyarsk Kray: "A Road for Coal"]

[Text] Assembly of a unique, 15-km long covered conveyor for the delivery of coal from a pit to a GRES has begun for the first time in this country, at the Kansk-Achinsk fuel and energy complex.

The "concreter" hurried monotonously past low, snow-covered mounds, then suddenly veered sharply to the right, and we caught sight of an unusual structure on the horizon. It was as if some kind of gigantic centipede was crawling up to the top of a hillock.

"Well, there's the conveyor gallery," explained my traveling companion, "Yu. Seliverstov, chief of Glavkrasnoyarskprommontazh's [not further identified] Department for Construction of KATEK [Kansk-Achinsk fuel and energy complex] Projects. "Isn't it impressive? Right now, one 'piece' that is 1,050 meters long is ready. In all, this unique main line will consist of five conveyors that are connected to each other. They are 1.8 meters wide and over them, at a rate of 270 meters per minute, our coal will go from an adjacent pit to Berezhovskaya GRES-1, which is under construction near Sharypovo and will be the largest in the world."

"We did not choose this version at random," joins in the conversation K. Bem, KATEK's director of coal pits under construction. "The distance is not very long. However, here we have to transport whole 'Everests' of coal: when the GRES reaches full capacity, it will require 27 million tons of coal per year. Just imagine the number of railway cars and trucks we have freed from this transport work, and how fuel will be saved. This variant for transporting coal is the most economical."

Together with Yu. Seliverstov, I walk along the route of the future road for coal. Working alongside the Siberians are their colleagues from assembly organizations in Leningrad, Moscow, Gorkiy and Belgorod.

This construction project is unique, and on scales and with assembly methods not previously known on construction projects. Here, at KATEK, the industrial flow line installation method is being used.



I meet Crew Leader Valentin Khrulev. About 60 experienced production workers work under him: drivers, electric welders, crane operators.

"We work by the crew contract method," says V. Khrulev. "The total amount of the contract is 2.2 million rubles. Even on KATEK's scale, that's a mighty big assignment."

11746

CSO: 1822/249

COAL

BOOK ON THIN-SEAM COAL MINING REVIEWED

Kiev UGOL UKRAINY in Russian No 6, Jun 85 pp 43-44

[Review by V. G. Yatskikh, doctor of technical sciences (Stakhanov Branch, Stakhanov Branch of the Kazakh Mining and Smelting Institute under the rubric "Criticism and Bibliography" of book: "Tekhnika Dlya Vyemki Tonkikh Plastov" ["Thin-Seam Mining Techniques"], by V. N. Khorin, Moscow, "Nedra", 1984, 217 pp]

[Text] The book under review examines the conditions encountered in mining thin, gently-sloping and inclined (up to 35°) seams up to 1.2 m thick, and the mechanization equipment now in use or under development, such as breakage-face combines, scraper-cutters, mobile base scraper conveyors, hydraulic drive for mechanized supports, breakage-face equipment complexes with mechanized supports and dust suppression equipment. The book shows the prospects for developing mechanized equipment for mining thin seams for the years immediately ahead. Mining geological conditions are the basic factor in determining the way in which equipment and production methods develop in coal mines. This is particularly important in relation to thin seams in constricted working areas. In the book's first chapter, mining geological conditions of thin seams are analyzed in fairly detailed fashion and from all sides. Roof rocks are classified according to their tendency to collapse. Coal reserves and volumes mined are shown, as is the equipment used. The author concludes that improvements in the technical and economic indicators for the work of mining sections can be implemented only through the technical reequipping of the breakage faces by way of introducing modern breakage face mining equipment of a high technical level, and by making qualitative changes in the procedure used in the comprehensive mechanization of mining operations.

It should be added that existing breakage complexes have the potential which needs to be used to increase the load at the longwall and to increase labor productivity.

In Chapter 2, the author presents, in condensed form, general information on the modern 1K-101U, KA-80, K-103 and RKU-10 breakage face combines used for mining thin seams, while leaving out a description of the obsolete 2KTsTG and Kirovets wide-cut cutter-loaders, the 1K-101 and MK-67 narrow-cut cutter-loaders and the experimental BKT cutter-loader, the manufacture of which is no longer planned, since the results obtained while testing it were not posi-

tive. The author then examines the actuators used on narrow-cut cutter-loaders, the VSP-1 remote feed mechanism and the designs for the state-of-the-art K-103 and RKU-10 cutter-loaders. The KA-80 cutter-loader is not described, though it has undergone industrial tests. The special features of the updated 1K-101u cutter-loader are briefly elucidated at the end of the chapter.

However, in this chapter, the author fails to analyze either the virtues or the flaws of the remote feed mechanism as compared with a chainless system, and draws no conclusion as to which of them we should favor.

Chapter 3 gives general information on scraper-cutters and makes recommendations regarding their use and choice of types, and describes the designs of UST-2m, SO-75 and SN-75 units. The chapter is laid out in condensed form and there are no data on the USV-2 or the US-3 scraper-cutters. There are errors in the layout of the blueprints, though nothing fundamental.

Chapter 4 describes base mobile scraper conveyors clearly and in condensed form, gives their designations, field of application and installation.

Chapter 5, which is critical to the study of mechanized supports and cutter-loader complexes, examines the installation of hydraulic supports, mobile hydraulic jacks, safety and relief valves, pressure indicators, hydraulic support blocks, hydraulic control valves, hydraulic mains and pump stations. Information about working fluid is provided.

In Chapter 6, which is the chapter most important to a full understanding of cutter-loader complex installations and the interaction of the support with the roof rocks, the first subject is a classification of mechanized supports according to their basic features, and then, and with sufficient comprehensiveness, we are given the operating characteristics of a hydraulic support and its actual resistance. The author notes that in connection with the best support of the roof rocks in the space near the breakage face, along with the possibility of moving sections of the support, which has provided positive support and increased stability, there is a tendency for the angles at which the seams slope to change within the entire range of from  $0^{\circ}$  to  $90^{\circ}$  for mechanized shield supports used for seams of from 0.8-6 m thick.

Chapter 7 examines the KMK-97m, 2KMKD, 1KM-88 and 1KM-103 cutter-loader complexes which are used to mine thin seams. In our view, it would have been useful to briefly set down the achievements of the leading brigades in their work using these complexes. The indicators resulting from our miners' successful mastery of new domestically-produced mining equipment confirm that the 1KM-103 complex will, in the very near future, be the basic unit of comprehensively mechanized equipment used in thin-seam coal extraction operations, though there remains a great deal of work before its design is finished.

Chapter 8 takes up an examination of the three basic methods of dust suppression: irrigation with water or froth, or by drawing the dust off with fans. Unfortunately the author leaves out the allowed health standards for dust content in the mine atmosphere, and he fails to say that dust can be effectively suppressed by using a combination of measures, in particular by wetting down the coal mass, by active ventilation, by operating the cutter-loader efficiently etc.

In the 9th and final chapter we find reflected the directions for development of the narrow-grab and frontal coal mining methods, even though some of the questions, in our opinion, are controversial. The narrow-grab method of mining coal using cutter-loaders and plow-type units combined with mobile breakage face scraper conveyors and mechanized supports is to become the basis for mining narrow seams. Along with this method, the general direction will be further developed and improved by the transition from the narrow-grab method to the frontal, single-operation method of mining, wherein mobile frontally operating coal mining equipment is used. In solving the problem of automatic or remote control of coal mining equipment, it will become possible to mine coal with no people at the breakage face.

All in all, this is a timely book, and will serve as an excellent handbook for coal mining engineering and technical personnel, as well as for instructors and students in mining VUZ's and tekhnikums.

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12659

CS0: 1822/302



COAL

SYNOPSIS OF ARTICLES IN UGOL UKRAINY No 6, JUN 1985

Kiev UGOL UKRAINY in Russian No 6, Jun 85 (Signed to press 29 May 85) pp 47-48

UDC 622.232:622.274 "Mine im. M. Gorkiy"

THE MINE IMENI M. GORKIY IN THE 11TH FIVE-YEAR PLAN PERIOD (EXPERIENCE OF MINING COAL RESERVES BENEATH DONETSK)

[Synopsis of article by A. M. Kolchin, pp 2-4]

[Text] The achievements of the Donetskugol Association's Mine imeni M. Gorkiy in technical reequipping for mining coal beneath Donetsk. The miners' labor successes. 5 illustrations.

UDC 622.232.72:658.14

HIGH-SPEED MINING IN THE MINE IMENI ABAKUMOV

[Synopsis of article by V. P. Melnichenko, A. G. Gudz and A. Yu. Nekrasov, pp 5-6]

[Text] The experience of B. F. Postovo's brigade in the Donetskugol Association's mine imeni Abakumov, carrying out high-speed mining with a gate conveyor. 1 illustration.

UDC 622.83:622.23+556.33

DETERMINING THE PARAMETERS OF AN INELASTIC DEFORMATION ZONE IN STOPING WORK

[Synopsis of article by N. T. Grishko, V. A. Margolin and V. P. Doroshev, pp 7-8]

[Text] A method for determining the width of a zone of inelastic deformations at the boundaries of stoping operations, and the nature of the rock deformations within the zone in relation to the changes in the water level in the shafts sunk into water-bearing and water-saturated horizons. 3 illustrations. 2 references.

PREDICTING SPEEDS AT WHICH PREPARATORY WORKINGS WILL BE DRIVEN

[Synopsis of article by R. A. Frumkin, pp 9-10]

[Text] A diagnostic system used for Voroshilovgradugol Association mining conditions, which correlates the experience in carrying out preparatory workings in a variety of mining geological and production conditions. How the system is used. 1 table. 1 reference.

UDC 622.26:624.138.4

USE OF POLYURETHANE TO PREVENT ROOF COLLAPSES IN WORKINGS

[Synopsis of article by S. P. Morozov, I. T. Butenko and Yu. V. Denisov, pp 10-12]

[Text] Results of testing a technique for reinforcing unstable rocks with a urethane composition in order to prevent cave-ins when driving and repairing workings. Special injectors using foam plastic sealant. 2 illustrations. 1 reference.

UDC 622.284.74

CHEMICAL METHOD OF REINFORCING ROCKS WHEN CHANGING WORKINGS BY STOPING

[Synopsis of article by Yu. P. Kochkov, V. M. Glebov and N. I. Laznya, pp 12-13]

[Text] Results obtained from using a chemical method of reinforcing rocks by injecting a polyurethane composition in the process of stoping a ventilator connection passage in the Oktyabrskiy Rudnik Mine, part of the Donetskugol Association's Oktyabrskiy sh/u [mining administration]. 1 illustration.

UDC 622.267.33

EXPERIMENTAL WORK ON PHYSICO-CHEMICAL REINFORCING OF ROCKS

[Synopsis of article by Yu. N. Dolotkin and A. A. Yefimenko, p 13]

[Text] Experience in using a physico-chemical method of reinforcing rocks with a urea resin based bonding solution in the Promyshlennyy Mine of the Vorkutaugol Association. 1 illustration.

EFFECTIVENESS IN SETTING UP THE OPTIMAL VOLUME OF SPARE PARTS FOR WHEEL EXCAVATORS

[Synopsis of article by Yu. N. Khotimchenko, p 14]

[Text] Determining the effectiveness of the optimal supply and comparing it with an experimental-statistical figure. Parameters of supplies quantitatively determined on the example of SRs(k)-470 and SRs(k)-2000 excavators. 2 tables.

UDC 622.23.054.8

IMPROVING THE OPERATIONAL PROPERTIES OF EXCAVATOR BUCKET TEETH

[Synopsis of article by P. I. Koshelenko, V. V. Papazov and E. N. Krivashov, pp 15-16]

[Text] Designs for welded teeth which increase the productivity and reduce the energy intensiveness of the excavating process while increasing the life of the teeth with long-term preservation of their initial geometrical form. Results of industrial tests of the teeth. 1 table. 2 illustrations.

UDC 622.7:658.3

FACTORS EFFECTING THE STABILITY OF COAL ENRICHMENT MILL COLLECTIVES

[Synopsis of article by B. G. Nagornyy, M. R. Tkanova and M. A. Bulko, pp 16-18]

[Text] Causes of the work-force turnover and methods for stabilizing Ukrainian coal enrichment mill labor collectives.

UDC 622.01:338.94

METHODOLOGICAL APPROACH TO CALCULATING THE QUALITY OF COMMODITY PRODUCTION IN ECONOMIC ESTIMATES

[Synopsis of article by S. Ya. Salyga and L. F. Yakovenko, pp 18-19]

[Text] An analysis of methods of calculating the quality of coal in economic estimates. Evaluation of the effectiveness of the scientific and technical resolutions which effect the change in quality of commodity production has been proposed, and is based on the outlay approach. 2 references.

UDC 622.232.72.054.001.5

THE INFLUENCE OF CUTTING TOOL RELIABILITY ON THE OPERATIONAL EFFICIENCY OF  
BREAKAGE FACE MINING MACHINERY

[Synopsis of article by Ye. Z. Pozin and Yu. N. Linnik, pp 19-20]

[Text] Relationships for determining the reduction in productivity, mining and efficiency connected with breakdowns of cutting tools and their replacement. An analysis of the effect of the tool's reliability on the technical-economic indicators during the operation of breakage face mining machinery on seams of coal with varying resistances to cutting. 2 tables. 1 illustration. 1 reference.

UDC 622.232.75:62--52

THE EFFECTIVENESS OF USING A NEW REMOTE CONTROL SYSTEM FOR THE 4PP-2m CUTTER-  
LOADER

[Synopsis of article by Yu. M. Kuzin, N. A. Mishchenko and A. Ye. Solonova, pp 21-22]

[Text] The distinguishing features and economic effectiveness of a new remote control system which is an integral part of a complex of KUAP-1 driving combine units. Its features are compared to those of series-produced units.

UDC 622.28

TEST RESULTS OF THE M-87UMA SUPPORT IN THE MINE IMENI ZASYADKO

[Synopsis of article by A. A. Serdyuk, N. V. Zherdenovskiy and N. M. Oleynik, pp 22-23]

[Text] The work of the M-87UMA automated support on the longwall, and its operational potentialities. Technical and economic indicators of working longwalls with an automated support. Economic advantages.

UDC 622.625.28--831:621.311.6.078

INDUSTRIAL TESTS OF THE ISN-1 PULSED VOLTAGE REGULATOR

[Synopsis of article by V. A. Serokurov and S. I. Kobylkin, p 23]

[Text] Installation and test results of the ISN-1 pulsed voltage regulator, designed to supply power to the auxiliary electric equipment of trolley-wire locomotives.



UDC 622.232.72--752.2

#### DAMPING DEVICES FOR MINING MACHINERY

[Synopsis of article by F. V. Kostyukevich, Yu. A. Krivchenko and I. N. Marchenko, pp 24-25]

[Text] An analysis of a number of design resolutions for damping devices and recommendations for prospective directions for the development of standardized and reliable devices. A selection of the basic parameters which provide optimal performance and reliability. Recommendations. 2 illustrations.

UDC 622.693.4(045)

#### PIPELINE ROCK TRANSPORT IN MINES

[Synopsis of article by I. I. Dudenko, pp 26-27]

[Text] The need to transport rocks by pipeline. Its advantages regarding production and the problems of devising new hydrotransport equipment. 1 table.

UDC 622.002.5:65

#### WORK EXPERIENCE OF A SPECIALIZED BRIGADE IN DEVELOPING AND INTRODUCING EQUIPMENT FOR MECHANIZING AUXILIARY PROCESSES AT THE MINE IMENI 25TH CPSU CONGRESS

[Synopsis of article by V. S. Zhukov, 27-29]

[Text] The experience of using devices and attachments manufactured by the brigade for the introduction of mechanization equipment in the Mine imeni 25th CPSU Congress, which is part of the Krasnodonugol Association. 2 illustrations.

UDC 621.926.6:622.333

#### ELIMINATING TRANSPORT DELAYS WHEN MEASURING LOOSE MATERIALS

[Synopsis of article by R. T. Franko, V. B. Matveyev and V. I. Pleskach, pp 29-30]

[Text] Control methods which make it possible to eliminate transport delays on loose materials measuring lines. 2 illustrations.

UDC 622.012.2:621.03:681.3

#### PROCEDURES FOR COMPUTER ESTIMATES OF 1,140-WATT POWER SUPPLY SYSTEMS FOR FACES

[Synopsis of article by M. I. Makarov, V. M. Snovedskiy and V. V. Turupalov, pp 30-31]

[Text] Procedure and block diagram of an estimating algorithm on a unified computer system for a 1,140-watt power supply for coal mine faces. 2 references.

**METHOD OF SELECTING OPTIMAL PARAMETERS FOR A BOOSTER CABLE FOR AN UNDERGROUND HAULAGE EQUIPMENT NETWORK**

[Synopsis of article by I. I. Kobalenko, pp 31-32]

[Text] Method for selecting optimal parameters for booster cable which complies with the parameters for a haulage equipment network, from the condition for providing maximum allowable voltage to electric locomotives and the distance between the points where the booster cable is connected to the contact coal-trolley wire. 1 illustration.

UDC 621.313.13--752--213.34:622.647

**ELECTRIC MOTOR VIBRATION IN MINE BELT CONVEYORS**

[Synopsis of article by V. M. Gostishchev and B. A. Zaytsev, pp 32-33]

[Text] Results obtained from measuring the vibrations of electric motors used to drive main mining belt conveyors equipped with T90A hydraulic clutches and flexible couplings. Article recommends the use of hydraulic clutches on in-house carriers and elastic couplings on single-motor drives. 1 table.

UDC 613.646:622.272.3

**MOBILE HEAT INJURY PREVENTION STATION FOR MINES**

[Synopsis of article by N. I. Menyaylo, G. I. Anenberg, L. A. Geshlin and Ye. V. Prisedskiy, p 34]

[Text] Installation, operational principles and effectiveness of a mobile in-mine heat-injury prevention station for miners involved in the driving of preparatory workings in deep mines.

UDC 622.831.322.327."313"

**THE GAS FACTOR IN THE MECHANISM OF SUDDEN COAL AND GAS OUTBURSTS**

[Synopsis of article by V. P. Khodykin, pp 34-35]

[Text] The mechanism which generates outburst hazard situations in the area near the breakage face of the seam. Article describes the nature of the change in the gas balance in the area near the seam face before and after coal or gas 1 table. 1 illustration. 2 references.

UDC 613.644:622.272

**CALCULATING EQUIVALENT NOISE LEVELS AFFECTING MINERS**

[Synopsis of article by D. O. Lastkov and A. V. Kolganov, pp 35-36]

[Text] Improved method for determining the equivalent noise levels affecting underground coal miners. 2 tables. 3 references.

UDC 622.831.322

**EVALUATION OF THE EFFECTIVENESS OF BREAKING UP ROCKS BY HYDRAULIC MEANS AT TERMINAL LONGWALL SECTIONS**

[Synopsis of article by S. Ya. Filonenko, S. G. Irisov and P. V. Boyko, pp 36-37]

[Text] Article discusses the use of hydraulic means to break up rocks in the take of the Donetskugol Association's Mine imeni Skochinskiy. Discusses the change in the allowable mining depth in the upper and lower recesses.

UDC 622.837:69.059.22

**UNDERWORKING DEVELOPED TERRITORIES IN AREAS WITH A POORLY STUDIED SURFACE DISPLACEMENT PROCESS**

[Synopsis of article by N. A. Spiridonov and L. P. Chepenko, pp 37-38]

[Text] Underworking experience in the city of Belozersk, in the Krasnoarmey-skiy Rayon, where the ground surface displacement process has been poorly studied. Taking instrumental observations is a requisite condition to under-working a developed territory in these conditions. 1 table.

UDC 622.834.1

**METHOD FOR GROUP CONSIDERATION OF ARGUMENTS FOR ANALYSING OBSERVATIONS OF GROUND SURFACE DISPLACEMENT**

[Synopsis of article by S. A. Medyantsev and S. I. Bocharov, pp 38-39]

[Text] Problems being solved through an analysis of data from natural observations of ground surface displacement. Use of MGUA [possibly group control module analysis] to isolate the natural component of the measured deformations. 1 illustration. 1 reference.

UDC 622.7.09:622.335

**PREDICTIVE ESTIMATE OF ASH AND MOISTURE CONTENT OF SCREENINGS AT ANTHRACITE ENRICHMENT MILLS**

[Synopsis of article by M. N. Yampolskiy and K. D. Gerashchenko, pp 39-40]

[Text] Relationships permitting expected ash and moisture content of screenings at anthracite enrichment mills to be determined in conditions typical of the Donbass. 2 tables. 1 illustration. 2 references.

UDC 622.257.122

**REDUCING TOXICITY AND SHRINKAGE IN PLUGGING ROCK**

[Synopsis of article by N. V. Popova, A. P. Titarev and L. G. Kalashnik, pp 41-42]

[Text] Results of research on reducing toxicity and shrinkage of plugging rock with urea resins. 1 table. 2 illustrations.

UDC 622.673.2:621.31

**ARRANGEMENT OF ELECTRICAL EQUIPMENT FOR UNDERGROUND INSTALLATIONS ON TOWER-TYPE HEADFRAMES**

[Synopsis of article by Yu. T. Razumnyy and A. V. Listov, pp 42-43]

[Text] Arrangement resolutions regarding the placement of electrical equipment for underground installations on tower-type headframes. Recommendations that TSZP dry-type transformers be used. 2 illustrations. 1 reference.

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12659

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NUCLEAR POWER

STATUS OF CONSTRUCTION WORK AT MINSKAYA ATETS

[Editorial Report] Progress in construction work at the Minskaya ATETs is related in a 1,200 word article in the journal NARODNOYE KHOZYAYSTVO BELORUSSII No 8, August 1985. The author of the article, V. Bogdanovich, describes his tour of the construction site and his conversation with the station's director, Viktor Ivanovich Shimanovskiy. According to the latter, the first power-unit will be ready in seven years, to be followed shortly afterwards by the second unit. The ATETs will then provide the Belorussian capital with all of its thermal power and will eliminate the need for boiler furnaces, thus saving 4.7 million tons of liquid fuel per year while also improving the quality of the air. This year should mark the completion of the preparatory period of construction, according to the author: the foundation pit under the main body of the first power-unit will be developed and testing of the piles in the reactor branch and the cooling towers must be completed, as well as other construction operations. Untimely delivery of metallic structures, such as large-diameter pipes for the header, which was originally scheduled for completion during the second quarter, is slowing up the work. The head of the division of general construction works, Aleksandr Nikolaevich Steblyanko, is described as not sharing the optimism of the supplier that the situation will improve. Workers cannot yet be fed at the site due to lack of water and unfinished dining facilities. A new town, as yet unnamed and currently containing 287 finished apartments, is being built several kilometers away from the site.

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CSO: 1822/349

NON-NUCLEAR POWER

COUNCIL OF MINISTERS DECREE ON WINTER MEASURES, FUEL RESERVES

Moscow IZVESTIYA in Russian 19 Jul 85 p 2

[Article under the rubric "Official Department": "Timely Preparation for Winter"]

[Text] The USSR Council of Ministers has adopted the decree "Providing the National Economy and the Population with Fuel, Electricity and Thermal Energy During the 1985-1986 Autumn/Winter Season". The USSR government has charged USSR ministries and departments and union republic councils of ministers with:

taking necessary measures prior to 15 November 1985 to see that our power stations complete repairs on their power production equipment, prepare their buildings, structures and transport equipment for winter operation and reduce the demand on their electrical capacities during maximum load hours;

establishing necessary reserves of coal and furnace fuel oil at power stations and in associations and enterprises, confirming the plans for fuel accumulation and setting monthly limits for its consumption for the 3rd and 4th quarters of 1985;

with taking a combination of measures in the cities, settlements and other population centers, which will provide an uninterrupted supply of fuel to the population, which will insure that needed quantities of local types of fuel are laid in and that transport equipment is allocated to carry out these measures.

The councils of ministers of union and autonomous republics and ispolkoms of local councils of people's deputies must work up and confirm schedules for the transition of power stations and industrial enterprises from natural gas to reserve forms of fuel during times of extreme drops in temperature. In compliance with USSR Mingazprom [Ministry of the Gas Industry] and USSR Minenergo [Ministry of Power and Electrification] this must be done prior to 1 September 1985. Measures must also be taken to insure that each union and autonomous republic and each kray, oblast and city observes the limits which have been set for consumption of electric power and use of capacities.

The USSR Council of Ministers has entrusted the union republic housing and utilities ministries with seeing that limits on the consumption and rational utilization of electrical and thermal power are observed.

The decree outlines measures for improving the organization of loading and unloading railroad cars and tank cars and reducing their idle time, and sets the assignments for USSR Minnefteprom [Ministry of the Petroleum Industry], Mingazprom and Minugleprom [Ministry of the Coal Industry] concerning recovery of petroleum, gas condensate, gas and coal, for petroleum refining and furnace fuel oil production for the first quarter of 1986. A number of other measures have been specified for providing the national economy and the population with fuel and electrical and thermal power during the upcoming autumn and winter seasons.

12659

CSO: 1822/308

NON-NUCLEAR POWER

SYNOPSIS OF ARTICLES IN ENERGETIKA I ELEKTRIFIKATSIYA, APRIL-JUNE 1985

Kiev ENERGETIKA I ELEKTRIFIKATSIYA in Russian No 2, Apr-Jun 85 p 56

UDC 621.18

MODERNIZATION OF PULVERIZATION SYSTEM AND AIR HEATER FOR 200 MW LOW-GRADE COAL-BURNING FACILITY

[Synopsis of article by V. G. Zdanovskiy, V. F. Pavlyuk and N. A. Syaber, pp 6-8]

[Text] The authors present results of the introduction of open pulverization systems in combination with a system whereby the powder is fed in high concentrations under vacuum and of the use of a tubular air heater in place of a regenerative heater for the first stage of the air heating system and the cost and engineering economic indicators for this type of upgrading. They show the efficiency this system achieves in burning low-grade coal. 4 references.

UDC 621.18

IMPROVING THE SYSTEM FOR SCRUBBING RECIRCULATING GAS ON THE TPP-312-1A BOILER

[Synopsis of article by Yu. A. Dolbnya and V. A. Sysoyev. pp 8-10]

[Text] The authors describe a compact new device for removing ash from recirculating gas with the objective of protecting the recirculating gas exhaust fan against abrasive wear. Introduction of this device has made it possible to reduce the dust content of chimney gas ahead of the recirculation exhaust fan to  $0.75 \text{ g/m}^3$ . The content of ash particles larger than  $50 \mu\text{m}$  in this gas will not exceed 10 per cent. This system offers improved design, lower capital and maintenance costs and savings of some 100 tons of metal per boiler and as much as  $350 \text{ m}^3$  of heat insulation. 2 illustrations.



## SELECTING CRITICAL FACTORS IN THE SULFUR OXIDE BONDING PROCESS IN FLUIDIZED BED FURNACES

[Synopsis of article by V. I. Shevchuk, pp 12-14]

[Text] This article discusses method, apparatus employed and results achieved from application of theory in planning an experiment to study the process of sulfur oxide bonding in a fluidized bed furnace. On the basis of statistical analysis of the results of a cutoff experiment the author establishes the critical factors involved in the process of sulfur oxide bonding in a fluidized bed furnace. 2 tables, 1 illustration, 3 references.

UDC 662.665:662.932.5

## CHARACTERISTICS OF THE BURNING OF ANTHRACITE CULM IN FLUIDIZED BED FURNACES

[Synopsis of article by B. K. Ilyenko, A. P. Kozhan, V. Z. Mordison, V. P. Volovenko and A. S. Vorobey, pp 14-16]

[Text] The authors present basic characteristics of the operation of the DKVr-10-13 and KE-25-14 boilers with furnaces with a high-temperature fluidized bed of anthracite culm. They discuss features of the design and operation of these furnaces. Data are presented on the heat output of the furnaces, emissions of sulfur and nitrogen compounds and the dust content of the exhaust gas. Authors suggest ways to reduce dust content. 2 illustrations.

UDC 621.311.22:621.039.004.6

## PRESSURE FLUCTUATIONS IN DRAIN LINES CARRYING BOILING CONDENSATE

[Synopsis of article by V. A. Gerliga, A. V. Korolev and L. A. Gerliga, pp 17-19]

[Text] The authors look at causes of vibration in the drain pipes of electric power plants. They present qualitative data reflecting the nature of fluctuations in pressure on the throttling plate related to the regime parameters of the flow. An experimental test is discussed of a number of methods of eliminating drain pipe vibration based upon effects exerted on the hydrodynamics of two-phase flow. 4 illustrations, 5 references.

UDC 621.314.224

## A NEW GENERATION OF HIGH-VOLTAGE CONVERTERS WITH STANDARDIZED CHARACTERISTICS IN TRANSIENT REGIMES

[Synopsis of article by B. S. Stogniy, Ye. N. Tankevich, V. A. Chernenko and A. F. Bepalyy, pp 39-42]

[Text] Article discusses methods of solving the problem of upgrading the metrological characteristics of electromagnetic current conversion meters (IPT) as they function under dynamic conditions in electric power systems, which have

served as a basis for the development and introduction into series production of a number of new IPT which fully satisfy the requirements of electric power systems with respect to precision of operation in both steady-state and transient regimes. Article includes specifications. 2 tables, 3 illustrations, 6 references.

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## NON-NUCLEAR POWER

## BRIEFS

**SAYANO-SHUSHENSKAYA GES EQUIPMENT DELIVERED**--The final assemblies and mechanisms for the 10th turbine of the Sayano-Shushenskaya GES [hydroelectric power station] have been delivered via the Yenisey River ahead of schedule by the Leningrad Metal Works Association collective. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 23, Jun. 85 p 3] 12659

**COMPLETING EKIBASTUZ-URAL LINE**--Chelyabinsk (TASS)--The builders of the Ekibastuz-Urals 1,150 KV alternating current power transmission line have come into the home stretch. Of its 1,210 km length, the last hundred km remain to be constructed through the fields and forests of the Chelyabinsk Oblast. "But these kilometers will hardly be our most difficult," said B. Tarasov, supervisor of Mechanized Column No 36, which is part of the Spetssetstroy [Special Electric Power Network Construction] Trust. "If the line was laid for the most part along steppe masses in Kazakhstan, then here our builders have encountered an interbranching network of gas pipelines, roads and other supply lines." The collective's switch to flow-line production methods provided the primary impetus for accelerating their efforts. All the stages in the construction of the LEP [power transmission line] were broken up into flow-line production units with narrow specialization in the personnel and equipment. This unique conveyor makes possible a high degree of quality in the installation work, more efficient utilization of equipment and a reduction in the time spent in completing the job. Significant gains in time were attained through the use of explosive energy. This innovation was introduced with the help of scientists from the USSR Academy of Sciences Siberian Division. Almost everything the creators of the Ekibastuz-Urals power-production span did was being done for the first time, since there are still no projects analogous to the commercial power transmission line with its 1,150 KV tension. In competing for a worthy greeting to the 27th CPSU Congress, the power installation workers are striving to bring the day closer, when the Urals plants will be receiving electric current from Ekibastuz. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 11 Jun 85 p 1] 12659

**UST-ILIMSKAYA GES PRODUCTION LEVEL**--The Ust-Ilimskaya GES [Hydroelectric Power Station] has generated its 10-billionth KW/hour of electric power since the beginning of the year. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 22, May 85 p 4] 12659

8 October 1985

**NERYUNGRINSKAYA GRES PRODUCTION LEVEL**--Serebryanny Bor, Yakut ASSR, (TASS)--The Neryungrinskaya GRES [State Regional Electric Power Station] has generated its first billion KW/hours since it was put on line in December 1983. This station now provides electric power to all the industrial enterprises of the Southern Yakut TPK [Territorial Production Complex], the city of Neryungri, the settlements along the Lesser BAM [Baykal-Amur Mainline] right-of-way, and the Berkakit-Tommot-Yakutsk railroad, which is now under construction. The Neryungrinskaya GRES is the first such power station on the BAM. It has already been connected to the Far East Unified Power System. A year and a half since the power station was put into operation, its entire complex of complicated equipment is enjoying trouble-free operation, which is evidence of the high quality of the installation operations. At present, the third power block, which will generate industrial current at the end of the year, is being assembled. This will conclude the first phase of the power station's construction. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 16 Jun 85 p 4] 12659

**DRAINAGE SYSTEM MAINTENANCE AIDED**--Minsk--Designers from the Belorussian Scientific Research Institute for Land Reclamation and the Water Economy have helped to reduce the labor intensiveness of servicing drainage systems. In accordance with their research effort, the Kokhanovo Construction Industry Plant has begun manufacturing multipurpose machine units designed to service hydraulic engineering equipment. This machine will free up to 20 people from manual labor. [Text] [Moscow SELSKAYA ZHIZN in Russian 16 Jun 85 p 1] 12659

**KRASNOVODSKAYA TETS TRIPLING CAPACITY**--Construction is presently in progress on the 12th power block at the Krasnovodskaya TETs [Heat and Electric Power Station]. Following the start-up of this power block, the capacity of this heat and electric power station will triple. [By G. Tsura, TURKMENSKAYA ISKRA correspondent] [Text] [Ashkhabad TURKMENSKAYA ISKRA in Russian 3 Jul 85 p 2] 12659

**UST-ILIMSKAYA GES POWER RECORD**--Irkutsk Oblast--A new paragraph has been begun in the chronicle of our hydroelectric power station: a number--10,000,000,000--was recorded on the meter at the third stage of the Angara River series at the end of May. Since the beginning of 1985 this station has generated 10 billion KW/hours of electric power into the Siberian Unified Power System. This is a new record for the Ust-Ilim power engineers. Nothing like this has ever happened here before. We usually produce 10 billion KW/hours only in August. Even in 1984, which was a good year for our water regime, this figure showed up on the station's meter no sooner than 16 June. It should be pointed out that the station's operating conditions did not change compared to last year. The boost in the output of electric power was achieved through intensifying the operation of the equipment. The water reservoir is presently receiving the autumn runoff, and our sea has grown by a whole billion m<sup>3</sup>. Our objective is to utilize them to maximum yields. [By G. Tulchinskiy, chief engineer, Ust-Ilimskaya GES] [Text] [Moscow NEDEL'YA in Russian No 23, Jun 85] 12659



**BAYPAZINSKAYA GES INCREASES CAPACITIES**--Baypaza (TadzhikTA) 28 June--The red flag has once again been hoisted over the construction area of the Baypazinskaya GES [Hydroelectric Power Station]: the hydraulic engineers have put the 2nd unit of the hydroelectric power station under commercial load. The station now has 300,000 KW of capacity, which is half of its projected capacity. First secretary of the Tadzhikistan Communist Party Central Committee R. N. Nabiyev noted that the Baypazinskaya GES--the 6th hydroelectric power station in the Vakhsh River series, which is now being set up--is generating electric power while under construction. Its first hydraulic turbo-generator unit was put into operation in January. The GES has already produced over 230 million KW/hours of electric power which is flowing into the unified power production ring of the Central Asian republics. The Baypazinskaya GES is a significant part of this plan. It has been called to play a critical role in improving the operational efficiency of the Nurekskaya power station and stabilizing the electric power supply from YuTTPK [Southern Tadzhikistan Territorial Production Complex] facilities. The construction of the Baypaza reservoir will improve the power-producing reliability of the Nurek power giant, and will, with its artificial sea, eliminate the limitations concerning the daily regulation of run-off and will make it possible to increase the guaranteed water supply in the Vakhsh-Yavan irrigation tunnel. [By a special TadzhikTA correspondent] [Excerpts] [Dushanbe KOMMUNIST TADZHIKISTAN in Russian 29 Jun 85 p 1] 12659

**USSR-FINLAND CONVERTER COMPLEX**--Vyborg--In the Leningrad power system, building has been completed and the largest converter (substation) complex in the world is now operating. The complex has a capacity of over a million KW, and will be used for the intersectorial USSR-Finland power transmission line. It was found during selection of a scheme for the high-voltage USSR-Finland LEP [power transmission line] that the most acceptable (of five different versions) accepted on the basis of its technical and economic indicators, was the version which transmitted power while using rectifying-inverter fuse, which is a device which converts alternating current to direct current and vice versa. This is precisely the device which permits different power networks to reduce their "habits". The first converter block was put into operation in 1981, and the last one started working only recently. But the experience gained through operating the complex has already convincingly shown that use of direct current fuses, as the power engineers call these devices, considerably enhances the operational stability and reliability of the USSR's United Power System, and is indispensable to the links with the electric networks of foreign countries. Moreover, the substation serves as a testing ground where engineering and technical resolutions are checked out, where the technique for transmitting power by using direct current is refined and where equipment and instruments undergo tests. The results will be used during the construction and operation of the Soviet Union's first ultra-long Ekibastuz-Tsentr 1,500 KV power transmission line and other projects slated for future construction. Right here is where personnel are being trained: the Vyborg Substation can rightfully be called a school for the work force. [By S. Borisova] [Excerpts] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 20 Feb 85 p 1] 12659

**TASHKENT POWER LINE OPERATING--(UzTAG)--**A new 22-km power transmission line, which has been laid from the tractor trailer plant substation in Leninsk to the village of Chinabad, will improve the reliability of the electric power supply for the Andizhan and Namangan oblasts. The 110-KV power transmission line has connected the power supply systems of the two oblasts, making possible a more rational and effective distribution of power during peak load periods. The power transmission line was constructed by a collective of an Andizhan mechanized column which is part of the Uzelektrosetstroy [Uzbek Power Network Construction] Trust, and was put under load a month ahead of schedule. [Text] [Tashkent PRAVDA VOSTOKA in Russian 6 Apr 85 p 1] 12659

**MARYYSKAYA GRES PRODUCTION REPORT--**The Maryyskaya GRES [State Regional Electric Power Station] imeni 50-letiya USSR is the largest in our republic. A shock-work shift, in honor of the 40th Anniversary of the Great Victory, has been crowned with great success: the plant generated 20 million KW/hours of above-plan electric power, and has saved 3,500 t of standard fuel and 1.5 million KW/hours of electric power. A one percent above-the-plan increase in labor productivity was also effected. [By V. Ivanova] [Excerpts] [Ashkhabad TURKMENSKAYA ISKRA in Russian 17 May 85 p 1] 12659

**NOVOANGRENSKAYA GRES PROGRESS REPORT--**Nurabad, Tashkent Oblast--At the Novoangrenskaya GRES [State Regional Electric Power Station], work on assembling the boiler, which has a capacity of 1,000 t of steam per hour has begun precisely on schedule. Simultaneously, brigades of the Uzbekgidroenergostroy [Uzbek Hydraulic Power Engineering Construction] Trust continue construction work on the power station's main building, where the first block recently began operation. At present here they are readying the "cell" of the 2nd turbogenerator for installation of its equipment. This unit is slated to be switched on in December. In accordance with the decisions of the 26th CPSU Congress, there are plans to bring Uzbekistan's annual electric power production levels up to 44-45 billion KW/hours during the five-year plan period. This limit has been reached ahead of time: the GES [hydroelectric power station] on the Chirchik River has been built, and the hydroelectric power stations on the Andizhan and Tuyamuyunskiy reservoirs have been switched on. According to specialists' calculations, switching on the first block of the Novoangrenskaya GRES will provide no less than 46 billion KW/hours during the final year of the five-year plan period. [Text] [Moscow SELSKAYA ZHIZN in Russian 5 May 85 p 1] 12659

**USSR-AFGHANISTAN POWER CONNECTION--(UzTAG)--**The Democratic Republic of Afghanistan is to receive electricity generated by stations of the Central Asia Unified Power System. Yesterday, the last section of the 220 KV power transmission line which starts at the Soviet substation Amuzang intersects the Amu Darya River and proceeds through Afghan territory from the riverside village of Khayraton to Mazari-Sherif, the center of the Balkh Province. The overall length of the line is 85 km. A substation with two transformers of 16 KV·amp-eres each has been built in Mazari-Sherif to receive the current. [Excerpt] [Tashkent PRAVDA VOSTOKA in Russian 28 Jun 85 p 1] 12659

BEREZOVSKAYA GRES-1 CONSTRUCTION PROGRESS--Krasnoyarsk Kray--KATEK [Kansk-Achinsk Fuel-Energy Complex] power engineers have taken an important step toward beginning installation operations on the first steam generator for the Berezovskaya GRES-1 [State Regional Electric Power Station]. They have installed two of the first blocks of the steam heat exchanger in the main building of this unique power station. Each of the water heaters in the Berezovskaya GRES-1 weighs 20,000 t. And the furnace, with its 100-m height and 23-m length and breadth, is a match for them. The designers have suggested that the gigantic steam generators not be set on foundations--the usual practice--but on powerful ridged beams. And they are to be assembled in unusual fashion--from top to bottom. [By A. Shcherbakov, IZVESTIYA correspondent]  
[Text] [Moscow IZVESTIYA in Russian 21 Jul 85 p 1] 12659

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